



## CITY OF LODI

## COUNCIL COMMUNICATION

AGENDA TITLE: Continue Public Hearing to Consider Adoption of the Updated Urban Water Management Plan

MEETING DATE: May 1, 1996

PREPARED BY: Public Works Director

RECOMMENDED ACTION: That the City Council conduct a public hearing on and adopt Lodi's Urban Water Management Plan.

BACKGROUND INFORMATION: During the 1983-84 Regular Session, the California Legislature enacted Assembly Bill 797, which, with subsequent amendments, created Water Code Section 10610, et seq., the Urban Water Management Planning Act. This Act requires the City of Lodi to review and update the Urban Water Management Plan every five years. This will be the second update of Lodi's Urban Water Management Plan. The adoption process requires a public hearing and adoption by the City Council.

The attached Plan updates Lodi's historical and projected population and water use, water rates, and water metering program status. The Plan's format was also changed to reflect the same format the State uses.

Substantive changes from the previous plan include a discussion of the Conjunctive Use project negotiations between eastern San Joaquin County water users and EBMUD (Page 5 and Exhibit L), and current water reclamation/recycling projects at the City's wastewater treatment facility (Page 11 and Exhibit Q).

A copy of the updated Urban Water Management Plan (approximately 75 pages) is available in the City Clerk's Office for those parties who did not receive the plan with this communication.

FUNDING: None required.

  
Jack L. Ronsko  
Public Works Director

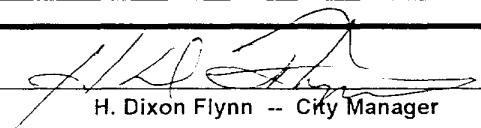
Prepared by Frank Beeler, Assistant Water/Wastewater Superintendent

JLR/FB/dsg

Attachment

cc: City Attorney  
Water/Wastewater Superintendent  
Assistant Water/Wastewater Superintendent

APPROVED: \_\_\_\_\_

  
H. Dixon Flynn -- City Manager



## CITY OF LODI

Carnegie Forum  
305 West Pine Street, Lodi

## NOTICE OF PUBLIC HEARING

Date: May 1, 1996

Time: 7:00 p.m.

For information regarding this notice please contact:

**Jennifer M. Perrin**

City Clerk

Telephone: (209) 333-6702

### NOTICE OF CONTINUED PUBLIC HEARING

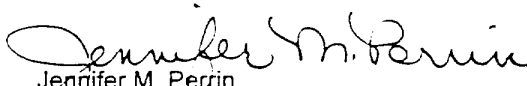
NOTICE IS HEREBY GIVEN that on **Wednesday, May 1, 1996** at the hour of 7:00 p.m., or as soon thereafter as the matter may be heard, the City Council will conduct a continued Public Hearing at the Carnegie Forum, 305 West Pine Street, Lodi, to consider the following matter:

- a) Adoption of the updated Urban Water Management Plan

All interested persons are invited to present their views and comments on this matter. Written statements may be filed with the City Clerk at any time prior to the hearing scheduled herein, and oral statements may be made at said hearing.

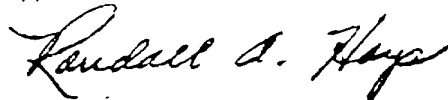
If you challenge the subject matter in court, you may be limited to raising only those issues you or someone else raised at the Public Hearing described in this notice or in written correspondence delivered to the City Clerk, P.O. Box 3006, at or prior to the Public Hearing.

By Order of the Lodi City Council:

  
Jennifer M. Perrin  
City Clerk

Dated: April 17, 1996

Approved as to form:



Randall A. Hays  
City Attorney

May 1, 1996 Public Hearing Draft

# **1995 CITY OF LODI URBAN WATER MANAGEMENT PLAN**

Updated March 15, 1996  
Amended and Adopted \_\_\_\_\_, 1996

**CITY OF LODI  
221 WEST PINE STREET  
P.O. BOX 3006  
LODI, CA 95241-1910**

Prepared by and Agency Contact Person:

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# **1995 CITY OF LODI URBAN WATER MANAGEMENT PLAN UPDATE**

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## EXHIBITS

- A. City Council Communication Calling for Public Hearing
- B. City Well Data
- C. Water Utility Service Area / Well Location Map
- D. Customer Categories and Water Uses
- E. Water Conservation Ordinance
- F. Annual Water Quality Report to Customers
- G. City Council Resolution 95-28.
- H. New and Former City of Lodi Water Rates
- I. Historical Water Use and Population
- J. Projected Water Use and Population
- K. Historical Groundwater Levels and Historical Rainfall Data
- L. Conjunctive Use Project Information Packet
- M. Water Conservation Information Sheet
- N. Violation Card
- O. Water Conservation Program Effectiveness Study
- P. Water Conservation Education Packet
- Q. City Wastewater Reclamation Use Study
- R. 1995-1996 Water Conservation Budget
- S. Contact People

# URBAN WATER MANAGEMENT PLAN

## CITY OF LODI, CALIFORNIA

Updated March 15, 1996  
Amended and Adopted \_\_\_\_\_, 1996

### SECTION 1

#### PLAN ADOPTION AND PUBLIC HEARING

This update of the Urban Water Management Plan for the City of Lodi has been prepared in compliance with California Water Code Sections 10610-(et Seq.). This section of the California Water Code requires that all urban water suppliers providing water for municipal purposes either directly or indirectly to more than 3,000 customers, or supplying more than 3,000 acre-feet of water annually, must prepare an Urban Water Management Plan and update it at least every five years.

As required by regulations, a public hearing on the updated Urban Water Management Plan was set for April 17, 1996 Lodi City Council meeting (Exhibit A). However the hearing was held over to the May 1, 1996 Lodi City Council meeting. This updated Urban Water Management Plan was available for public viewing before the public meeting.

This updated Urban Water Management Plan was adopted by the Lodi City Council on May 1, 1996. The updated Urban Water Management Plan is required to be submitted to the California Department of Water Resources within 30 days of approval.

## **SECTION II**

### **CITY OF LODI AND WATER FACILITIES**

#### **CITY OF LODI**

The City of Lodi, founded in 1906, lies in the Northern San Joaquin Valley in the San Joaquin County. The City of Lodi, which the City's water system services, encompasses approximately 7,000 acres of land. The City government is comprised of an elected City Council with the City Mayor elected from the City Council members. The City of Lodi's potable water supply is 100% groundwater. Currently there are approximately 55,000 residents and approximately 21,200 water customer connections.

The climate is Mediterranean with warm, dry summers and wet, foggy winters. The rainfall averages approximately seventeen inches per year which falls mainly from October through April. The City is bordered to the north by the Mokelumne River.

#### **WATER UTILITY**

The City of Lodi's potable water supply is 100% groundwater. Currently there are 23 active production wells and one on emergency standby status. Exhibit B gives the name, location and capacity of the City wells. Exhibit C is a map showing the City's Water service area and the City well locations. One new well and a new 1-million-gallon water storage tank are proposed for 1996-97. The City of Lodi water system operates under permit from the California Department of Health Services. The permit was renewed in 1995.

Residential water users and 28% of all non-residential water users are unmetered, therefore any segregation between users can only be estimated. Approximately 72% of the City of Lodi's potable water use is by residential customers, 28% by commercial/industrial and governmental customers, and less than 0.01% for agriculture. Exhibit D contains the above data.

Lodi has enforced the City's Water Conservation Ordinance Regulations since 1977. Water Conservation in Lodi is supported by the City Council and as a continuing program, has earned the

support of Lodi's citizens. The latest revisions to Lodi's current Water Conservation Ordinance (Exhibit E) were in 1991.

Lodi's Water Conservation Ordinance has had great success. In 1976, the year before the ordinance was adopted, Lodi delivered 4.434 billion gallons of water to a population of 32,150; averaging 378 gallons per capita per day (gpcpd). In 1995, the City delivered 4.689 billion gallons of water (a 5.7% increase from 1976) to a population of 54,694 (a 70% increase), with an average 235 gpcpd (**a 38% decrease**). These gpcpd figures use total water production, including all industrial and commercial uses, which is then divided by the population. Lodi's Water Conservation Program is discussed in detail later.

The City's General Plan Update which establishes a 2% growth rate, was approved by the City Council in 1991. Lodi's population growth over the past five years has been approximately 1.75% per year.

A State Department of Health Services regulated volatile organic compound, the banned agricultural pesticide Dibromochloropropane (DBCP), is present in approximately five wells at levels requiring treatment. Four wells are currently set up for treatment with Granulated Activated Carbon filtration systems and the fifth well is on emergency standby status. For further information on Lodi's drinking water system and drinking water quality, the June 1995 Annual Water Quality Report to Customers is attached as Exhibit F.

## **WATER METERS**

The City has been installing meters on all new commercial and industrial customers since 1977. The City had been retrofitting existing commercial and industrial users with water meters until the Lodi City Council discontinued the program in 1994 to "save money". Of the approximately 1,235 commercial water customers, approximately 347 remain unmetered.

Since January 1, 1992, all "new water service connections" were to be metered per California law. The City currently sets a meter box and collects fees for the installation of a water meter on all "new water service connections". However, the meters are not installed because Lodi does not have residential meter rates established nor the personnel authorized to read the residential meters. The meters will be



installed when residential metered rates are established and the necessary personnel are authorized to read the meters. Exhibit G is a copy of the Lodi City Council approved Resolution No. 95-28 endorsing this approach.

## **WATER RATES**

Water rates were modified effective June 1, 1995. The new rates are compared to the former rates in Exhibit H. The new rates have encouraged conservation for the metered water user by eliminating the former water allowances. The former water allowances gave metered users an amount of water included in the base meter rate before any additional charges for water were in effect. For example, a metered water user with a one inch meter was allowed over 40,000 gallons each monthly metering period before water unit charges were in effect. Additionally the flat rate commercial customers now pay a higher monthly flat rate than the base rate charged for a metered service.

## **SECTION III**

### **WATER USE, WATER SUPPLY OUTLOOK, CONJUNCTIVE USE**

#### **PAST, CURRENT, AND PROJECTED WATER USE**

An attached chart (Exhibit I) shows the historical total water production and compares this to the respective populations as gallons per capita per day (gpcpd). The projected population and water use is in Exhibit J. Two projections are given using growth rates of 1.5% and 2.5% and water demands of 235 gallons per capita per day (gpcpd) and 270 gpcpd respectively.

#### **PAST, CURRENT, AND PROJECTED WATER SUPPLY**

The historical drop in the groundwater, 1962 through 1995, has been approximately six inches per year. However, during the drought conditions of 1986 through 1992 ground water levels dropped a total of 12 feet, or an average of 2 feet per year. Some of the City wells pump bowls have had to be lowered. Since the 1991-92 season, the area has seen three above-average rainfall seasons and one below-average rainfall season. Over the past three years, the water table has increased an average of eight inches per year, or a total of two feet. Exhibit K is a chart showing the historical standing groundwater levels as measured at Lodi City wells from 1962 through 1995 and historical rainfall data.

While it is projected that the City of Lodi will continue to have an ample groundwater supply, surface water is also a source Lodi may consider in the distant future (20+ years). Sources of surface water could be from the Mokelumne River or purchasing water from future water conveyance structures (i.e., canals or pipelines) in the Lodi area.

#### **CONJUNCTIVE USE PROJECT**

The City of Lodi is actively participating in discussions and negotiations concerning future water supplies in the eastern San Joaquin County area. The City is a part of a group of eastern San Joaquin County water users negotiating a conjunctive use project with the East Bay Municipal Utility District (EBMUD). Attached as Exhibit L is a document, which has been reviewed by the Lodi City Council, concerning the latest conjunctive use water planning and principles affecting the eastern San Joaquin County and negotiations with EBMUD.

## **SECTION IV**

### **WATER CONSERVATION PROGRAM**

#### **WATER CONSERVATION PATROL**

The City has had an ordinance for water conservation (Exhibit E) since the drought of 1976-77 and has developed into one of the most comprehensive on-going programs functioning in the San Joaquin Valley. The program consists mainly of outdoor watering restrictions enforced by water conservation patrol officers, public education, and an in-school education program.

From 1977 through 1988, a single water conservation officer patrolled during the months of May through October. Since 1989 three to four water conservation officers have patrolled from May through October to intensify and enhance the program.

The Water Conservation Patrol Officer's duties are to enforce the provisions outlined in the City Ordinance. These include prohibition of water waste, provision for dissemination of information and advice to aid our water customers, and notices of violation issuance for water wasting. An information sheet (Exhibit M) is given out when water wasting is observed. All violations are recorded on a violation card (Exhibit N) and filed by address.

The success of Lodi's water conservation program was evaluated in an in-house study. The summary report of the study is given in Exhibit O.

#### **IN-SCHOOL EDUCATION PROGRAM**

A Water Educational Program was introduced to Lodi elementary schools in 1986. This program supplements and enhances our total effort to conserve water, as well as other natural resources. In 1986, four pilot schools were introduced to the program. Presentations have been given in 17 schools, including four parochial schools, within the Lodi City limits. In 1995, there were 241 classroom presentations.

The program includes water science demonstrations with the objective of instilling water awareness and providing information about Lodi's water system and water conservation techniques.

The education program is aimed at grades K through 6th. It is felt to be most cost effective to develop water awareness and a sense for water conservation while children are most impressionable during their formative years. A more detailed discussion of the educational program is contained in Exhibit P.

### **PUBLIC INFORMATION/EDUCATION**

The City water conservation program participates in four local fairs; the Crime Prevention Fair (sponsored by Lodi Police Dept.), the Conservation Fair (sponsored by local agencies concerned with conservation), the Lodi Grape Festival and Harvest Fair, and Earth Day. Staff converses with the fairs' visitors about Lodi's water conservation program and answers questions they might have concerning water issues. We also give out information sheets and conservation kits and have had contests for prizes such as low flow shower heads.

Watering day reminders have been periodically included on the utility bills and on Lodi's cable TV station throughout the summer months. Newspaper articles and ads are also published throughout the year in Lodi's and Stockton's newspapers reminding Lodi residents of the water conservation regulations, offering conservation tips, and relaying the successes of the program. Attractive refrigerator magnets with the watering day and hour schedules are given out by patrol officers and at the local fairs.

### **WATER CONSERVATION KITS**

Since 1977, Lodi has distributed water conservation kits (toilet tank displacement bag, dye tablets and shower/faucet flow restrictors). These kits are available at no charge through the Water Conservation Office and at the Finance Department (utility billing).

## **SECTION V**

### **WATER SHORTAGE CONTINGENCY PLAN**

#### **PAST, CURRENT, AND PROJECTED WATER USE**

An attached chart (Exhibit I) shows the historical total water production and compares this to the respective populations as gallons per capita per day (gpcpd). The projected population and water use is in Exhibit J. Two projections are given using growth rates of 1.5% and 2.5% and water demands of 235 gallons per capita per day (gpcpd) and 270 gpcpd respectively.

Due to the fact that residential and 28 % of non-residential water users are not metered, these water production records cannot easily be broken down into separate types of use. Exhibit D shows the current estimated breakdown of water usages. The General Plan calls for growth to be approximately the same in all categories of water users and would therefore coincide with the projections in Exhibit J.

#### **ESTIMATION OF MINIMUM WATER SUPPLY**

The City of Lodi's water supply is 100% groundwater. Although groundwater levels have been dropping as mentioned above, there seems to be no short-term (12, 24, or 36 months) problems with water supply. The amount that the groundwater levels could drop in 12, 24, and 36 months would have a relatively insignificant effect on our ability to obtain the groundwater.

Loss of the capacity to deliver water to the distribution system could occur due to mechanical problems with wells, pumps, motors, etc. These are the same facing every water supplier. Solutions to these problems include sound preventative maintenance programs and the ability to make timely repairs when needed. However, these are not "supply problems" as related to a drought-type situation.

## **STAGES OF ACTION**

The City of Lodi will continue the current water conservation efforts including enforcement and education to conserve the water supply over the long term. Having no residential meters, no supply problems, and a conservation program that has resulted in per capita water use reductions of approximately 24% since 1986, we feel there is no need to spend time on developing stages of action that seem not to be needed nor easy to enforce without residential meters. A 50% loss in "water supply" would be possible only if 50% of the City Well capacity were down. Again, this would be a mechanical/operational problem, not an actual water supply problem.

## **MANDATORY PROVISIONS**

There are mandatory provisions already in place. See the Water Conservation Ordinance in Exhibit E. Further mandatory provisions could include increased restrictions on watering days and hours, restrictions on washing vehicles, etc., restrictions on large water users, restrictions on flushing of water lines, restrictions on the filling of swimming pools, and increases in the current penalties for not complying with water conservation restrictions.

## **CONSUMPTION LIMITS**

Consumption limits cannot easily nor equitably be set because neither residential users nor all commercial/industrial users are currently metered. The amount of park and landscape irrigation allowed and a restriction on industrial and large commercial users could be examined in the event of an emergency.

## **PENALTIES OR CHARGES FOR EXCESSIVE USE**

See the Water Conservation Ordinance in Exhibit E for current charges or penalties. The current charges could be increased in the case of an emergency.

## **IMPACT OF PLAN ON REVENUES AND SPENDING**

There is no extraordinary financial impact anticipated on the revenues and expenditures of the City of Lodi Water Division.

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit P**

CITY OF LODI, PUBLIC WORKS DEPARTMENT  
Water/Wastewater Division  
Municipal Service Center  
1331 South Ham Lane, Lodi, CA 95242  
(209) 333-6740

Water Conservation Education Program

Prepared by: George Sande, Water Conservation Officer  
Frank Beeler, Assistant Water/Wastewater  
Superintendent

THE CLASSROOM

Philosophy

Using a gut-level hands-on approach that is stimulating to the class is a prerequisite to accomplishing the objectives to teaching "Water Science" in the classroom. It must be pertinent and challenge their imagination.

My previous teaching experience has been at the secondary level. I believe the elementary level is far more cost effective when considering lifetime attitudes, values and habits being molded and established in the most formative period of their lives.

Objective

Instill water awareness and interest particularly among students in grade levels K thru 6, and the application of this awareness be utilized in all aspects of water conservation. This is accomplished by short lectures with students participating and with several "magic" water shows/experiments that they are challenged to guess results and to do at home.

Procedure

The preparation of materials necessary for the particular grade level must first be selected and organized for presentation. The materials for the water experiments can be very simple in that nearly all the ingredients may be found in the kitchen and most of the materials can be collected from garbage cans.

This equipment is organized and put into a cardboard box. A two-wheeled cart is a convenience for wheeling from class to class.

An overhead projector is a must if a transparency is being used. It is also important when showing water in a medicine dropper, objects floating on water (seen through a glass plate).

Always arrange to be in the classroom at least five or ten minutes early to set up and make observations. It is important to observe student displays on bulletin boards in the classroom and even in the hallways because often their ideas and current projects on display can be worked into the water presentation.



Also, if you can initially impress them with your observations of their activities they are better conditioned to be receptive to your demonstrations.

The initial introduction for a presentation usually includes distribution of book markers and an OUR WATER brochure. The book marker has an anti-drug message on one side and a water conservation message on the other. This presents an opportunity to reiterate the anti-drug message and present the City of Lodi message concerning WATER IS LIFE, DON'T WASTE IT. Then the brochure is briefly discussed. The students are asked to identify familiar objects and landmarks shown on the front page. Then they are asked to take the brochure home and maybe play the same game with their parents, brothers, sisters, or even friends. It is suggested they encourage their parents to read the information on the other three pages.

The teacher is given a yard/meter stick for class use. The water conservation logos imprinted on this ruler is briefly discussed.

### Teaching

My presentation always varies in some way, but basically I think it is best to establish enthusiasm by indicating I play the part of a magician in performing water tricks. At the same time, they are informed that there will be no charge for the performance and all the secrets will be revealed. At this point they are encouraged to perform at least one of the tricks for their parents, brother, sister or friend.

Since enthusiasm is so vital for group participation, I constantly ask questions to see if they can predict the outcome of each experiment explaining that no one is "wrong" until after they can see the conclusive proof before their eyes.

One of my favorite lessons is to teach OSMOSIS by using an egg, potato or fish. If it is a fourth grade class, I use all three. (These lessons are enclosed)

The message I try to convey is that the water conservation program is THEIR program. This is where the gut-level approach is emphasized. By a raise of hands, I have found that about 90% of elementary students have pets. A simple reminder that if we didn't have water, all their pets would be dead--is a sobering thought for all. Another example: By displaying a cross section of a tree and showing them the tree rings which indicates the age of a tree as well as dry and wet years is a documentation of drought periods. Such documentation has shown on very old trees that from the year 1620 to 1671 there was a fifty year period of consecutive drought years. They listen when you suggest the possibility of this happening in their life time.

Of course such dramatic facts and methods will vary with the level of the class I am teaching.

Teachers are invariably receptive and interested in the presentations and nearly always do follow-up on some aspect of what I did in their particular class. Many use the experience as a language arts assignment and I have received literally hundreds of letters from students or packets of students' art work along with their letters. The letters are particularly revealing to me in that they indicate their perceptions, interests, and understanding.

Even though I feel well prepared and organized when presenting a lesson, I have found there is always room for spontaneity and adapting to unique differences in classes. I think this philosophy is important because a fresh approach will always help prevent one from giving a stale presentation.

#### SETTING UP THE PROGRAM

Most of my organizational methods were learned by trial and error. Due to constant changes occurring in some schools, I feel the following approach is the best way. You will also find each school is unique in itself.

Normally, I meet with one of the principals (depending which one decides to be in charge). I then discuss the basics of our whole water conservation program. At this time I also arrange to meet with all the teachers at the next Principal-Teacher meeting. At this meeting I explain what I do in the classroom and briefly outline the objectives of our educational program. This meeting also gives them a chance to ask questions.

Initially I introduce my calendar. It is enlarged so that each teacher can sign up for a class by indicating their name, grade level, time and room number in the chosen open date block. This calendar is then posted in the teachers lounge room for continued scheduling in advance.

It is best to have the teachers sign up at the meeting when the calendar is being passed around during the time I am talking to them--about 10 or 15 minutes. It also insures their understanding of the sign up procedure.

Periodically, I check all calendars which have been posted even if there have been no classes in the school. New sign-ups are logged in my master calendar appointment book. At this time I leave a City Action Slip notice in the teacher's mailbox confirming the requested class. My business card is attached to the calendars so that the teachers can phone me in case of cancellation or changing schedule.

When checking calendars it is beneficial if you can arrange to do so during a time when several teachers are in the lounge room. Invariably, teachers tend to sign up when they see me in the lounge room or somewhere on the campus. Calendars are checked

when I give a demonstration at that particular school, but it is important to check each school at least once a week.

#### EXTRACURRICULAR ACTIVITIES

In order to enhance, expand and further support the educational aspects other innovations come into play such as:

1. Evening classes for Boy Scout/Girl Scout troops.
2. Speaking to the Rotary, Kiwanis, Business Mens' Club and ATT employees, etc.
3. The city co-sponsored a water conservation workshop held at UOP in Stockton. Eighty eight teachers attended this workshop.
4. Newspaper stories.
5. As a Docent, I have conducted tours in the Wilderness Area surrounding Lodi Lake. Class discussion is held at the outdoor amphitheater.
6. Posters: I send letters to all teachers who have participated in a classroom demonstration with an invitation to submit a class poster. The poster, 28" X 44", is provided by the city. The California Department of Water Resources has declared the month of May as Water Awareness Month and we have been able to cooperate with their efforts in this way. This year I picked up 46 posters from classrooms which were distributed to banks, hospitals, City Hall, restaurants, and other business establishments. Teachers were informed of the location of their class poster so that parents and students might see the exhibit. All participating officials receiving the poster were very receptive to the idea.
7. Fair Booth: The most beneficial factor with having a Fair Booth at our local festival is for drawing the attention of teachers who may sign up for a class. They need only designate the month they want a class. I call them later for confirmation of specific day and time.

We are all very interested in anyone planning a similar water conservation program and the City of Lodi will assist in any way possible to initiate and establish this vital program that should no longer be ignored.

## MATERIALS

1. AIMS Newsletter-AIMS Education Foundation  
P.O. Box 7766  
Fresno, CA 93747  
See enclosed samples.
2. California Department of Water Resources (DWR)  
Office of Public Information and Communication  
Room 1104-1, Resources Bldg  
1416 Ninth Street  
Sacramento, CA 95814  
Telephone: ATSS 8-473-5839  
Water conservation ideas and tips.  
Listings of their publications, techniques DWR NEWS.
3. American Water Works Association (AWWA)  
Information Service  
6666 West Quincy Avenue  
Denver, Colorado 80235  
(303) 794-7711  
Water conservation info. charts, articles on tours, drought, award campaigns (water awareness month promotion).
4. ADCO Specialties Catalog  
1924 Pacific Avenue  
Stockton, CA 95204  
(209) 467-0433  
Pens, calendars, rulers, flags, bookmarks, slogans, emblems, keys, novelties, badges, pictorial illustrations
5. Walter W. Cribbins Company  
562 Mission Street  
San Francisco, CA 94105  
(415) 543-4153  
Conservation Materials, Slogans, pictures
6. Discovery Toys  
Kathy Bell  
Educational Consultant  
335 Louie Avenue  
Lodi, CA 95240  
(209) 369-7708  
Educational toys for K-6, clay, paints, blocks, gifts, creative units, puzzles, jig saw, magnets, mirrors, fish, simple experiments.

MATERIAL SUPPLIERS (CONT.)

- |    |   |  |
|----|---|--|
| 7. | East Bay Municipal Utilities<br>Department (EBMUD)<br>Public Information<br>P.O. Box 24055<br>Oakland, CA 94623<br>(415) 891-0609 | Field trips, charts, maps,<br>requested local information,<br>fishery, reservoirs, brochure on<br>water-health, pamphlets. |
| 8. | Stockton Blue Reprographics<br>Supplies<br>1421 North El Dorado<br>Stockton, CA 95202<br>(209) 464-6012                           | Custom designing prints, vellum,<br>copies. Our slogan and<br>illustration was reproduced<br>(enlarged) by them.           |
| 9. | Informational Booklets<br>Channing L. Bete Company Inc.<br>200 State Road<br>South Deerfield, MA 01373                            | Booklets pertaining to all aspects<br>of conservation; water treatment,<br>etc.  |

**1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE**

**Exhibit Q**

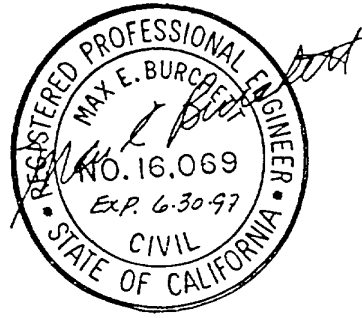
## MEMORANDUM

Date: January 9, 1995

To: Jack Ronsko / Fran Forkas  
City of Lodi

From: Max E. Burchett  
Whitley, Burchett and Associates, Inc.

Subject: White Slough Water Pollution Control Facility (WSWPCF)  
Evaluation of Proposed CYSA Regional Soccer Complex Impact on  
WSWPCF Effluent Disposal Land Requirements



### Introduction

This memorandum summarizes a preliminary technical evaluation of the adequacy of the city's WSWPCF effluent disposal lands to accommodate the proposed regional headquarters complex of the California Youth Soccer Association (CYSA).

The evaluation is based on the recent proposal by the CYSA to locate a major headquarters/soccer complex on 275 acres of city-owned land east of the I-5 freeway. The 275 acres are currently scheduled to be added to the land already being irrigated with reclaimed water from the WSWPCF.

### Existing Facilities

The city currently owns approximately 1,040 acres of land at its WSWPCF site. Of the total land available, usage is broken down into the following categories:

<u>Land Use</u>	<u>Acres</u>
Treatment plant structures, grounds and unusable land	57 acres
Treatment and storage ponds	45 acres
Lands scheduled to be brought under irrigation	275 acres
Lands for mosquito district fish ponds	12 acres
Lands used by No. Calif. Power Agency (NCPA) power plant	10 acres
Remaining lands currently under crop irrigation	641 acres
<b>Total</b>	<b>1,040 acres</b>

Of the total land owned by the city, approximately 916 acres are available for irrigation of agricultural crops or turf and any required additional storage ponds or auxiliary facilities. Another 45 acres are currently dedicated to the storage of off-season industrial waste influent and municipal secondary effluent.

### Proposed CYSA Soccer Complex

The proposed soccer complex will occupy approximately 275 acres of city-owned land which is currently planned for use to irrigate agricultural crops using municipal secondary effluent,

industrial wastewater and digested sludge. The soccer complex will consist of a headquarters office building, a dormitory, parking, three developed park areas, irrigation water storage ponds, miscellaneous landscaped areas, and up to 50 soccer fields and auxiliary facilities arranged in modules of 18, 18 and 14 fields each. The initial phase of the project will include the office, dormitory and two modules of 18 soccer fields each and auxiliary facilities.

## Evaluation

A preliminary evaluation of the CYSA proposal was made using a water mass balance model of the city's effluent irrigation facilities. The model uses a modification of the method recommended in the California State Water Resources Control Board publication entitled "Irrigation with Reclaimed Municipal Wastewater. A Guidance Manual", July 1984. In this method, the recommended irrigation rates are matched with the actual water needs (evapo-transpiration rates) of the various crops (or other vegetation) being irrigated.

### Description of Mass Balance Model.

The model works by tracking all of the water inflows, outflows and crop water needs on a weekly basis for one year and calculating the amount of irrigation land needed for each of the crops and turf, as well as the net change in the amount of storage needed to confine the water on the site.

Inflows to the model include -- municipal secondary effluent, industrial waste influent and anaerobically digested municipal sludge. Also included is precipitation at average and 100-year conditions.

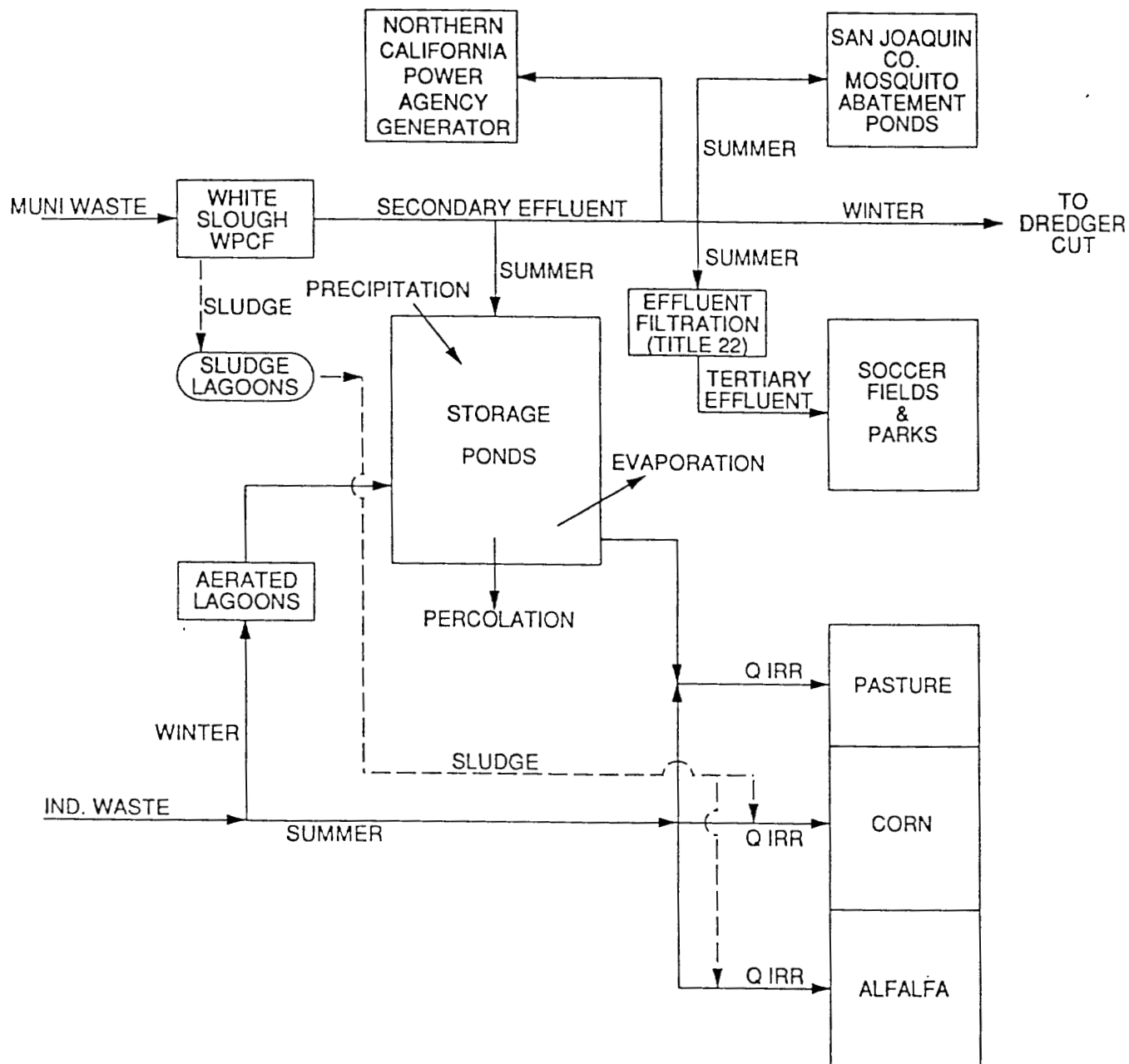
Model outflows include -- crop irrigation, sludge disposal, soccer turf and park irrigation, NCPA cooling water, mosquito district ponds, and evaporation and seepage from the storage ponds. Figure 1 shows a schematic of the water mass balance including all of its sources and destinations. Note in Figure 1 that water for the soccer fields and park land is taken directly from the WSWPCF secondary effluent and does not pass through the storage basins before it is given tertiary treatment to satisfy Title 22 requirements for unrestricted irrigation. The soccer facility is currently expected to include 10 acres of its own storage for the Title 22 irrigation water.

The mass balance model includes the following major components -- irrigated areas by crop type or turf and storage ponds for reclaimed municipal and industrial wastes.

Key Assumptions. Several important assumptions have been included in the model runs. These key assumptions are summarized as follows:

- The current mode of operation of the WSWPCF and effluent irrigation will remain essentially unchanged. The periods for discharge to Dredger Cut and for crop irrigation will remain the same. The only time period that will be different will be for soccer turf and park irrigation, which will be longer than the irrigation duration for the other crops by approximately 12 weeks.
- WSWPCF flows will be:
  - municipal effluent - 5.8 mgd (current) and 8.5 mgd (design).
  - the municipal effluent will increase at an annual compounded rate of 2%. This results in WSWPCF reaching its design capacity of 8.5 mgd in approximately 20 years.
  - industrial wastes - 230 mg/yr (no increase in future flows)





WHITE SLOUGH WATER POLLUTION CONTROL FACILITY  
**SCHEMATIC DIAGRAM**  
**EFFLUENT IRRIGATION FACILITIES**

Figure 1

- Number of soccer fields - 18 (initial), 36 (by end of first year), and 50 (by end of fifth year).
- Soccer turf and park irrigation rates will be at the same weekly rate as pasture irrigation except at the beginning and end of the natural growing season. At the beginning and end of the natural growing season, the soccer turf only will be watered at a minimum of 1 inch per week. One inch per week at each end of the irrigation season is somewhat higher than the normal demand for pasture, and will be used to stimulate turf growth early in the spring and to help maintain it well into the fall. The duration of soccer turf irrigation is assumed to extend from March 1 to November 30 and the total annual irrigation rate will be 66 inches/year (compared to 50 inches/year for pasture land).
- Water for soccer turf and park irrigation will be taken directly from the secondary effluent and treated to tertiary (Title 22) levels as required for unrestricted landscape irrigation. It will not pass through the city's existing storage ponds and will be diverted as necessary even after the discharge of secondary effluent to Dredger Cut is resumed.
- The NCPA power plant is designed to operate for 300 days per year (1 turbine, 10 years). It will take 1.6 mgd and return 0.5 mgd of secondary effluent. This will result in 330 mg/yr of secondary effluent being removed and not available for irrigation or disposal.
- Mosquito abatement district will use reclaimed water to feed several ponds on a 12 acre site which will be subject to losses by evaporation and seepage, and inflows from precipitation and secondary effluent as needed. This usage amounts to 40 mg/yr.
- Both 100-year and average year rainfall conditions are evaluated because each of these hydrologic condition results in different irrigation land and storage pond requirements for the project. The use of 100-yr precipitation is a conservative assumption used for this preliminary evaluation to establish the basic feasibility of the project. It is possible that a 10-yr or 20-yr rainfall return period may be acceptable to the Regional Water Quality Control Board (RWQCB). However, final design requirements for the project will have to be confirmed before the final project sizing can be established.

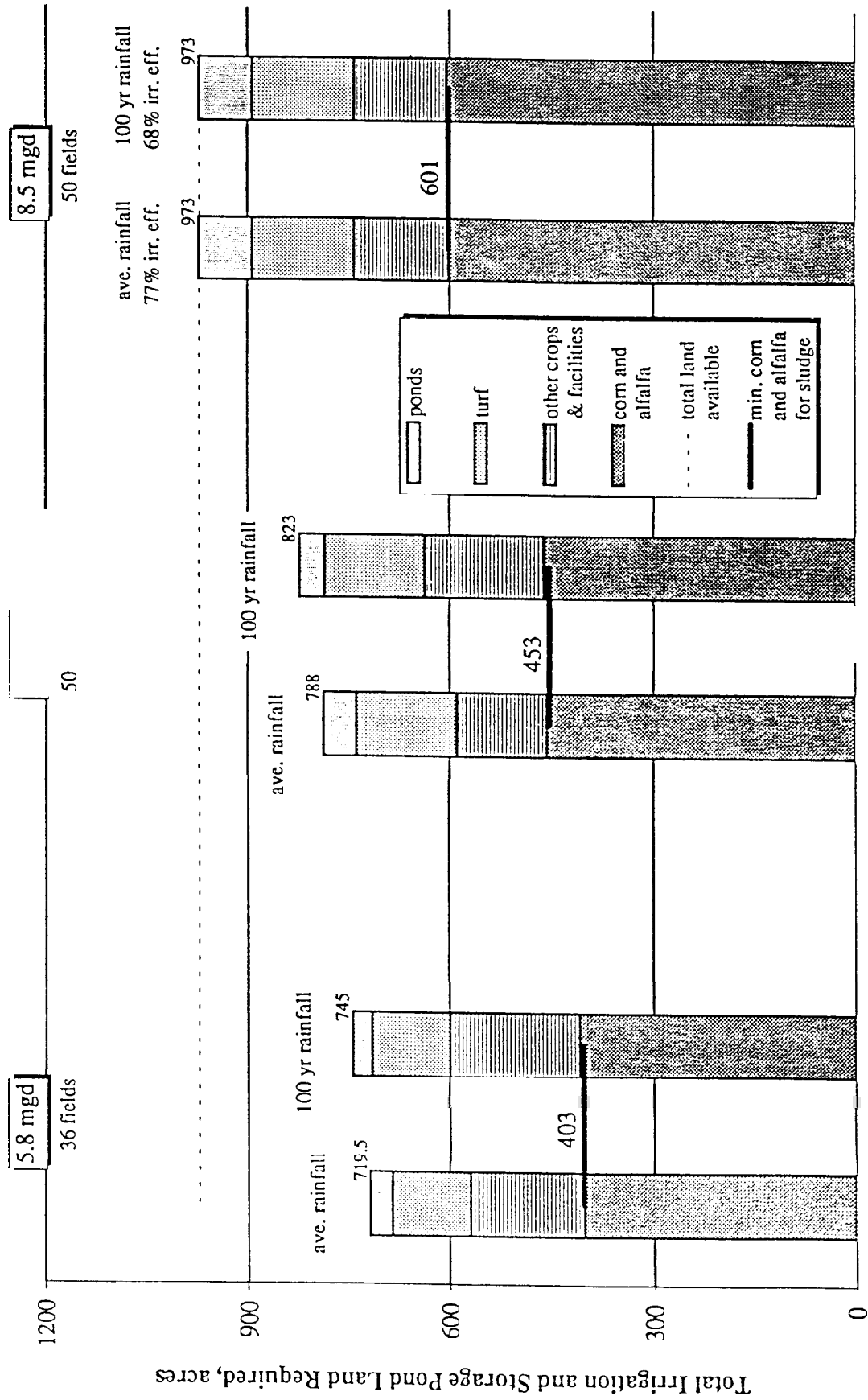
## Results

The results of the preliminary mass balance model runs are summarized in the attached Figure 2. In this figure, the amount of land required to dispose of the current and design municipal secondary effluent, industrial wastewater and digested sludge flows is shown for several key combinations of crop and turf areas. The combinations of crop and turf areas were selected to fulfill the requirements of the soccer facility, sludge disposal, and discharge duration to Dredger Cut. These crop and turf combinations are shown in Figure 2 with the soccer complex at the initial and final stages of development and with all the facilities operating at the WSWPCF design flow of 8.5 mgd.

### Initial Phase

With 36 soccer fields included in the first year of the CYSA project, the total required acreage ranges from 719 to 745 acres, depending on the "design" precipitation rate. The larger acreage assumes that the facilities will be subject to an extremely wet year of 30.5 inches annual rainfall (i.e. the 100-year rainfall return period for Lodi). The smaller acreage represents the land requirements for an average precipitation year with 18.0 inches of annual rainfall. The city's current storage capacity of 45 acres would be adequate for the 29 to 35 acres estimated by the model at this initial stage. These acreages are for the city's storage requirements only and do not

Figure 2. Summary of Land Requirements - White Slough WPCF



Note: Irrigation efficiency is 80% unless indicated otherwise.

**Table 1**  
**Land Requirements and Annual Water Needs for**  
**White Slough Water Pollution Control Facility**  
**Initial Phase with 36 Soccer Fields.**

<u>Water Use</u>	<u>Land<sup>1</sup>, acres</u>	<u>Gallons<sup>2</sup> (mg)</u>
NCPA		330
Mosquito Abatement Pond	12	40
Alfalfa	319	441
Corn	90	80
Pasture	24	35
Soccer Turf	118	196
Park Lands	119	162
Storage Ponds	35	
Soccer Storage Ponds	10	
Soccer - pavement and non irrigated land	24	
Total	751	1,284

include the CYSA's 10 acre irrigation storage pond for the soccer complex and the 12 acres for mosquito fish ponds. The 10-acre irrigation storage pond for the soccer complex will need to provide a minimum of 6.0 million gallons of active, working storage.

Table 1 is a summary of the annual water uses and actual land requirements for the initial phase. Note that Table 1 includes the largest values for irrigation land and storage pond land from the average and 100-year rainfall model runs. For example, the irrigation land area required for the "wet" year is larger than for an average year because the additional precipitation must be used for irrigation. Conversely, the model predicts that slightly more pond area will be required during an average year than a wet year. Therefore, this larger combination of crop land and storage ponds produces the total acreages that needs to be provided.

#### Second Phase

In 5 years, when the final 14 soccer fields are placed in service together with a small increase in the WSWPCF average daily flow, the total required acreage increases to between 788 and 823 acres, depending on the annual precipitation (See Figure 2). A total of 37 to 49 acres of storage ponds would be required; therefore, the current 45 acres of storage ponds may still be adequate for these conditions. Table 2 presents a summary of annual water uses and land area needs in the second phase. As before, Table 2 includes the larger of the pond and acreage values from each of the two rainfall scenarios.

#### Final Phase - Design Flows.

When all 50 soccer fields are constructed and the WSWPCF is operating at full design capacity, the total land area required would exceed 1,030 acres during a 100-year precipitation year. Since the

<sup>1</sup> The crop irrigation efficiency is 80%.

<sup>2</sup> The gallons column indicates the total volume of water needed by the crop. In the model this is provided by a combination of secondary effluent, industrial waste, sludge and precipitation, depending on the crop.

**Table 2**  
**Land Requirements and Annual Water Needs For**  
**White Slough Water Pollution Control Facility**  
**Second Phase With 50 Soccer Fields.**

<u>Water Use</u>	<u>Land<sup>1</sup>, acres</u>	<u>Gallons<sup>2</sup> (mg)</u>
NCPA		330
Mosquito Abatement Pond	12	40
Alfalfa	354	493
Corn	101	89
Pasture	44	62
Soccer Turf	156	251
Park Land	80	109
Storage Ponds	49	
Soccer Storage Ponds	10	
Soccer -pavement and non irrigated land	30	
Total	836	1,374

amount of land currently available is 973 acres, the city may have to purchase an additional 57 acres to handle the "wet-year" precipitation at design conditions.

As an alternative, the existing land could be irrigated at somewhat higher rates than assumed in the water mass balance model runs. For all of the model runs, an irrigation efficiency of 80% was used in calculating the amount of water which has to be applied to satisfy the evapo-transpiration requirements of the crops. When irrigating crops, however, it is necessary to apply a certain amount of "excess" water to control the salt concentration (salinity) in the root zone of the plants. Irrigation efficiencies generally range between 50-80%, depending on the irrigation water quality, soil characteristics and the salt tolerance of the crops. In general, soils with fine grain sizes and clays require more leaching water than larger grained soils. In this case, all of the effluent could be utilized on the existing land if the irrigation efficiency were reduced to 77% in an average year and to 68% in an extremely wet year. A summary of the land requirements and annual water uses at design conditions is presented in Table 3, assuming the reduced irrigation efficiency of 68% from above.

The importance of controlling irrigation efficiency cannot be overestimated. If insufficient irrigation water is used, especially in fine grained soils or with salt sensitive plants, crop yields will drop significantly as the salt concentration increases in the root zone. Perhaps even more important, if the irrigation efficiency is too low and excessive water is used on the crops, the extra water can lead to degradation of the underlying groundwater resources. In addition, over-irrigation could lead to water shortages and user cutbacks during drought years in the future.

#### **Title 22 Effluent Treatment.**

All reclaimed water used to irrigate the soccer field turf, park and landscape areas for the proposed CYSA complex must meet the requirements of Title 22, Environmental Health, of the California Code of Regulations, as administered by the California Department of Health Services. These regulations require that the reclaimed water must be coagulated, filtered and disinfected to very

**Table 3**  
**Land Requirements and Annual Water Needs For**  
**White Slough Water Pollution Control Facility**  
**Full Capacity With 50 Soccer Fields.**

<u>Water Use</u>	<u>Land<sup>3</sup>, acres</u>	<u>Gallons<sup>2</sup> (MG)</u>
NCPA		330
Mosquito Abatement Pond	12	40
Alfalfa	490	740
Corn	131	119
Pasture	10	14
Soccer Turf	156	275
Park Land	80	112
Storage Ponds	81	
Soccer Storage Ponds	10	
Soccer -pavement and non irrigated land	30	
Total	1,000	1,630

high standards before being used for unrestricted landscape irrigation. This additional treatment would have to be provided prior to completion of the initial phase of the soccer complex.

Based on the projected water demand for turf and park irrigation during the maximum week, the design capacity of the initial phase Title 22 treatment facilities will be approximately 1,300 gpm. This design capacity assumes that the required volume of filtered water is produced on a continuous 24-hour basis. The initial filtration, disinfection and pumping facilities would be designed to be expanded to approximately 1,750 gpm before the city needs to serve the full complex of 50 soccer fields. The ultimate pipeline would be constructed in the initial phase.

Preliminary construction cost estimates for the Title 22 coagulation, filtration and disinfection facilities for the initial soccer complex (36 fields) and park facility are summarized in Table 4.

These budget estimates include construction costs (equipment and installation) and engineering costs for the Title 22 treatment and disinfection facilities and a new pumping station and piping to transport the reclaimed water to the pond at the soccer complex. They do not include any costs for odor control facilities, environmental documentation or annual operation and maintenance costs.

The city staff has estimated that providing odor control at the headworks and primary clarifiers would cost \$800,000 and an odor masking system for CYSA special events would cost approximately \$100,000.

Annual operation and maintenance costs for the Title 22 treatment and disinfection facilities and pumping station are estimated to be approximately \$150,000/year for the initial year of operation (in 1994 dollars). Operation and maintenance costs for the odor control and masking systems are not included in the above estimate.

<sup>3</sup> The crop irrigation efficiency is 77% during an average precipitation year and 68% during a 100-year precipitation year.

**Table 4**  
**Estimated Cost of**  
**Initial Title 22 Filtration Facilities**

	Initial Phase	Final Phase
Number of soccer fields served	36	14
Design flow, gpm	1,300	450
<u>Estimated cost, \$1,000</u>		
Chemical coagulation	\$150,000	\$50,000
Filters	750,000	300,000
Disinfection	200,000	90,000
Recycled water pump station	100,000	40,000
Pipeline to soccer pond	200,000	0
<b>Total construction cost</b>	<b>\$1,400,000</b>	<b>\$480,000</b>
Engineering and contingency allowance @±15%	200,000	70,000
<b>Total estimated budget</b>	<b>\$1,600,000</b>	<b>\$550,000</b>

## Conclusions

The following conclusions have been drawn from this preliminary evaluation:

- There is currently sufficient water, storage and land acreage for the initial phase of the CYSA soccer facility to be implemented -- 36 soccer fields with auxiliary facilities, office and dormitory buildings, and park and landscaped areas.
- There will be sufficient water and land acreage for the second phase of the CYSA soccer facility to be implemented in 5 years. However, the estimated requirement of 49 acres of storage ponds exceeds the existing 45 acres of ponds. Depending on a more detailed analysis of the existing ponds, 45 acres may be adequate for the first few years of the second phase of development, but additional storage would be required soon thereafter.
- Substantial new storage pond capacity will be needed to properly manage the recycled water as the WSWPCF reaches its design capacity of 8.5 mgd. At that time, approximately 81 acres of storage ponds will be required, or 36 acres more than currently exist. The modeling runs indicate that the ultimate storage pond requirements for the WSWPCF operations are not increased by the presence of the CYSA soccer complex.
- At the design capacity of 8.5 mgd and average precipitation, it will be necessary to reduce the crop irrigation efficiency slightly to 77% to use all of the reclaimed water on the currently available property at WSWPCF. For a wet year (100-year precipitation), the irrigation efficiency will have to be reduced to approximately 68%. Both of these efficiencies are well within expected values for the irrigation water quality, soil characteristics and crop and turf mix at the WSWPCF site.

**1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE**

**Exhibit R**



PUBLIC WORKS DEPARTMENT  
WATER/WASTEWATER DIVISION  
WATER

DETAILED BUDGET REQUEST

WATER CONSERVATION  
PROGRAM  
18-451.03

Function	Budget Request	Account, Title and Items Included
103	38,430	<p>PART TIME EMPLOYEES SALARY - This function includes expenditures for part-time water conservation enforcement and school program.</p> <p>One (1) Water Conservation Officer (March 1-November 1) (1560 hours @ \$8.30) \$12,950</p> <p>Year-round 1/4 time school program (520 hours @ \$8.30) 4,315</p> <p>Three (3) Deputy Water Conservation Officers (April 15 - October 15) (3,120 hours @ \$6.48) 20,220</p> <p>One (1) clerical (5 hours per week/24 weeks) (120 hours @ \$7.87)</p> <p>Administrative Clerk I (Part-Time) - Step A <u>945</u></p> <p><b>TOTAL \$38,430</b></p>
111-125	4,845	OVERHEAD
201	175	POSTAGE - This function includes expenditures for postage for enforcement and material for promotion of water conservation.
202	700	TELEPHONE - This function includes expenditures for dedicated hot line for Water Conservation Program 333-6829 and a cellular phone to expedite complaint calls after hours.
301	850	PRINTING, BINDING & DUPLICATION - This function includes expenditures for miscellaneous printing and duplication of water conservation handouts.
303	150	ADVERTISING - This function includes expenditures for advertising water wasting ordinance in local newspaper and radio spots when needed.
307	225	OFFICE SUPPLIES - This function includes expenditures for miscellaneous office supplies.
308	75	BOOKS & PERIODICALS - This function includes expenditures for technical books and periodicals related to water conservation and education.
314	150	BUSINESS EXPENSE - This function includes expenditures for miscellaneous expenses at seminars or workshops.
321	<del>325</del> 375	RENTAL OF FACILITIES - This function includes expenditures for a booth at the Lodi Grape and Wine Show, September 1995.

PUBLIC WORKS DEPTM.  
WATER/WASTEWATER DIVISION  
WATER

DETAILED BUDGET REQUE

WATER CONSERVATION  
PROGRAM  
18-451.03

Function	Budget Request	Account, Title and Items Included										
352	675	<p>SPECIAL DEPARTMENTAL MATERIALS - This function includes expenditures for water educational handouts to be distributed to water customers and students of Lodi public and private schools.</p> <table><tr><td>Water Conservation Education Projects</td><td>\$150</td></tr><tr><td>LUSD Poster Contest</td><td>75</td></tr><tr><td>Water Conservation Kits</td><td>200</td></tr><tr><td>Miscellaneous promotional items</td><td><u>250</u></td></tr><tr><td><b>TOTAL</b></td><td><b>\$675</b></td></tr></table>	Water Conservation Education Projects	\$150	LUSD Poster Contest	75	Water Conservation Kits	200	Miscellaneous promotional items	<u>250</u>	<b>TOTAL</b>	<b>\$675</b>
Water Conservation Education Projects	\$150											
LUSD Poster Contest	75											
Water Conservation Kits	200											
Miscellaneous promotional items	<u>250</u>											
<b>TOTAL</b>	<b>\$675</b>											
358	75	<p>TRAINING &amp; EDUCATION - This function includes expenditures for audio and video films and miscellaneous registration fees for one day workshops or seminars.</p>										
621	350	<p>DONATION - This function includes expenditures for an annual contribution to the California Department of Water Resources, through Association of California Water Agencies for the sponsorship of Water Awareness Week each year.</p> <p>WATER RESOURCES ASSOCIATION 18-451.03</p>										

**1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE**

**Exhibit S**

## **CONTACT PEOPLE**

### **City of Lodi**

Mayor - David P. Warner  
Council Member - Phillip A. Pennino  
Council Member - Jack A. Sieglock  
Council Member - Ray G. Davenport  
Council Member - Stephen J. Mann

City of Lodi  
P.O. Box 3006  
221 West Pine Street  
Lodi, CA 95241-1910  
tel. (209) 333-6702  
fax (209) 333-6842

City Manager - H. Dixon Flynn  
Public Works Director - Jack L. Ronsko  
Water/Wastewater Superintendent - Fran E. Forkas  
White Slough Water Pollution Control Facility - Del Kerlin  
Water Conservation Education Officer - Orson Laam

### **Person completing this plan:**

Frank Beeler - Assistant Water/Wastewater Superintendent  
City of Lodi  
1331 South Ham Lane  
Lodi, CA 95242  
tel. (209) 333-6740  
fax (209) 333-6841

### **Other contact people**

California Department of Health Services, Office of Drinking Water;  
Mr. Joseph Spano - (209) 948-7697 Stockton Office  
Prabhakar Somavarapu - (209) 948-3878 Stockton Office

California Regional Water Quality Control Board;  
Patricia Leary - (916) 361-5600

interested parties or by an overall agency formed by the interested parties. We have not reached that point yet.

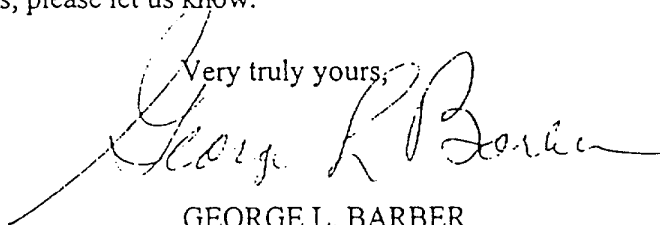
We know a major issue for all concerned will be "how much will it cost" and "how will we pay for it." Until the project becomes more firm after negotiations we cannot come to any meaningful conclusion as to cost. We do know cost will be a major issue for all concerned.

Meanwhile, we would like your approval and the approval of all of the other involved agencies to be sure we are moving in the direction you desire.

While you have had representatives on the Technical and Policy Committees, if you would like someone to appear before your body, for a more detailed explanation, we would be happy to arrange for it.

Should you have any questions, please let us know.

Very truly yours,

A handwritten signature in dark ink, appearing to read "George L. Barber". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

GEORGE L. BARBER

Chairman

San Joaquin Conjunctive Use Policy Committee

GLB:TJS:EMS/ect  
Enclosure

PRINCIPLES FOR FURTHER NEGOTIATION RELATIVE  
TO A CONJUNCTIVE USE PROJECT

(10/16/95)

1. The following principles shall apply to a phased conjunctive use/water banking project (Project) to be undertaken jointly by the Eastern San Joaquin Parties (ESJP) and the East Bay Municipal Utility District (EBMUD).

2. Eastern San Joaquin County is an area suffering from an overdrafted groundwater basin and includes, among other areas, the territory within the boundaries of the Eastern San Joaquin Parties, that is, the Woodbridge Irrigation District, the North San Joaquin Water Conservation District, the City of Lodi, the Stockton East Water Conservation District, the City of Stockton, the Central San Joaquin Water Conservation District, and the adjoining County territory under the jurisdiction of the San Joaquin County Flood Control and Water Conservation District.

3. The ESJP will undertake joint negotiations with EBMUD and other interested parties including Sacramento County, if requested, but two way negotiations with EBMUD on matters of concern to the ESJP and EBMUD shall continue.

4. The priorities of the Project shall be in order, as follows:

FIRST: To stop the overdraft of the Eastern San Joaquin  
County basin;

SECOND: To restore the basin to an agreed upon  
progressively improving recovery level;

THIRD: To supply the water needs of the ESJP;

FOURTH: To supply the water shortage needs of EBMUD in dry  
years.

## 5. Project Conveyance Facility

5A. The ESJP continue to prefer a canal along the original alignment of the Folsom South Canal to allow water to move in both directions as needed.

5B. If EBMUD and the ESJP elect to construct a conveyance facility from the Folsom South Canal to the Aqueducts the facility should have the capacity to convey EBMUD's full entitlement of 150,000 acre-feet per year and the facility should have appropriate turnouts north and south of the Mokelumne River accessible to the NSJWCD and other interested water users in a manner which will provide gravity service as originally contemplated from the alignment of the Folsom South Canal.

5C. Even if EBMUD and the ESJP construct a facility from the Folsom South Canal to the Aqueducts, a conveyance facility should be constructed north from Peters to an agreed upon point north of the Mokelumne River.

6. Water Supply

6A. The minimum, acceptable supply of water to ESJP in wet years (as defined by DWR) is 300,000 acre-feet.

6B. 371,000 acre-feet of water should normally be available in wet years through the EBMUD entitlement from the American River, or an equivalent amount from the EBMUD Mokelumne River entitlement; the SEWD-CSJWCD entitlement from the Stanislaus River; all water on the Mokelumne River not now used by EBMUD or any downstream water right holders; any unregulated flows on the Calaveras River which can be put to use; and, any unregulated flows in Little Johns Creek which can be put to use.

7. Facilities which shall provide water shall include but will not be limited to:

7A. A conveyance facility extending at least to an agreed point north of the Mokelumne River and as far south as Peters.

7B. Gravity diversion structures from the Mokelumne and the Calaveras to the north-south conveyance facility.

7C. A combination of new agricultural distribution systems such as injection wells, surface water facilities, and in-lieu recharge systems with a minimum, total capacity of 265,000 acre-feet with a minimum of 10,000 acre-feet of annual, firm surface



water delivered to NSJWCD.

7D. EBMUD injection/extraction or in-lieu facilities with a minimum capacity of 70,000 acre-feet, which will operate within geologic formations in a manner which will in no way impair water quality within Eastern San Joaquin County and will create a common source of water for the ESJP and EBMUD.

8. Phase I Extraction Thresholds; Goals; Use:

8A. The Parties shall develop a dynamic base groundwater profile through groundwater and saline intrusion monitoring facilities as a means to set minimum, standard groundwater conditions for the area and to continuously monitor the basin. The profile will include information on water quality, salinity levels, and water table elevations.

8B. EBMUD shall not extract water for export if the groundwater levels in the basin drop below the groundwater levels reported for the fall of 1990 by the San Joaquin County Flood Control and Water Conservation District.

8C. The groundwater elevation goals are to be 30 feet below sea level east of Highway 99 and 20 feet below sea level west of Highway 99 and where groundwater elevations are now above those levels, then the current elevations. These groundwater elevation

goals shall be revised if warranted through analysis of the information obtained pursuant to the monitoring described in 8A in conjunction with other relevant data, water quality goals, groundwater levels, and salinity intrusion goals.

8D. Should the goals set forth in 8C not be met within ten years after the start of project operations, Phase II shall be implemented.

8E. Until the goals of 8C are met, EBMUD shall be allowed to extract an agreed upon percentage of the water stored by EBMUD within the groundwater basin. After the goals of 8C are met, the Parties shall be entitled to an equitable share of all waters stored in the basin as part of this project as agreed upon by the parties. All extractions by EBMUD shall remain subject to 8B.

9. Phase II shall be implemented if the goals set forth in 8C are not achieved within ten years of the Project's start of operations. The Agreement between the parties shall ensure that Phase II will be implemented by the parties when required.

10. Phase II may consist of one or more of the following:

10A. An enlarged and reconstructed Farmington Dam suitable for water storage as well as flood control.

10B. South Gulch Water Conservation Reservoir.

10C. Additional recharge facilities.

10D. Other facilities as may be agreed upon by the parties.

11. Use of Delta and/or Sacramento River water, if any, shall be proportionate between EBMUD and the ESJP.

12. Localized groundwater drawdown, caused by the Project, shall be minimized so as to avoid unnecessary impacts on groundwater users through prudent extraction site selection. Adverse impacts on groundwater users shall be fully mitigated. Seepage and high groundwater level impacts caused by the Project shall also be fully mitigated.

13. The ESJP continue to be opposed to the EBMUD approach set forth in Composite No. 2 of the Water Supply Management Program.

14. Integration of EBMUD's American River supply into the project is essential to develop a successful conjunctive use/water banking program between EBMUD and the ESJP. It is recognized that diversions from the American River by a joint American River project would be subject to the "Judge Hodge Decision," as it may be modified. EBMUD in consultation with the ESJP, shall, seek modification of the terms of the "Judge Hodge Decision", to allow for conjunctive use of both American and Mokelumne River waters. Integration of San Joaquin County's

filing on the American and Mokelumne Rivers and other local water entitlements as well as increased yields from combined operations, new facilities and supplies, should be evaluated for use in any conjunctive use project. Other reasonable alternatives should be considered in a study to provide information on yield, costs and constraints.

15. The cost of distributing water to the various parcels of agricultural lands within the territory of the ESJP will vary substantially depending upon the proximity to the sources of water and the extent of surface water distribution facilities already in place as well as such additional facilities as may be required in the Project. The inclusion of EBMUD's needs will require distribution of water to additional agricultural lands beyond those necessary to meet the needs of the ESJP. EBMUD's participation in the basin must not directly or indirectly impair providing for, or increase the cost of, meeting the water needs of the ESJP.

16. The conjunctive use study and joint plans for the Project shall not use land fallowing or other irrigation curtailment except reasonable conservation to develop water supply.

17. Costs shall be allocated in an equitable manner.

18. It is understood that the project may require further review under the California Environmental Quality Act (CEQA). If CEQA

review is found to be necessary for the project it will be pursued jointly.

19. If a favorable court ruling, allowing the use of EBMUD American River Contract water in a conjunctive use project utilizing American River and Mokelumne River water and the Eastern San Joaquin County groundwater basin, is not received within a mutually agreeable time of an agreement for conjunctive use between EBMUD and the ESJP, and if an alternate supply is not identified, then the agreement shall terminate.

20. These Principles are established under the assumption the groundwater basin will have sufficient capacity to store the amount of water needed by the ESJP and EBMUD.

21. Governance/Finance

21A. The current Policy and Technical Committees of the ESJP will recommend creation of an appropriate organization for the purposes of governance and finance of the ESJP share of the Project.

21B. In selecting the type of agency or organization to be created, the ESJP will enter into discussions on form weighing the factors of ease of implementation, taxing/assessment authority, degree of administrative efficiency upon formation, and boundary issues in making their decision.

21C. The governing board of the proposed agency will be comprised of members appointed by the East San Joaquin member parties. Each member party will appoint at least one representative to the governing board. Additional representation will be apportioned through the benefits to, and burdens on, the respective member parties. Members of the governing board shall be elected officials of the respective member parties.

22. Until such organization is formed, the present Policy and Technical Committees of the ESJP will take such actions as necessary to continue moving forward with the Project.

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit M**



# INFORMATION SHEET

## Requirements of the City of Lodi Water Conservation Ordinance

### Ordinance Requirements - Water waste includes but is not limited to:

1. Allowing a controllable leak of water to go unrepaired.
2. Watering lawns, flower beds, landscaping, ornamental plants or gardens, except on watering days as follows:  
Odd-numbered addresses on Wednesday, Friday and Sunday; Even-numbered addresses on Tuesday, Thursday, and Saturday. (WATERING IS NOT ALLOWED ON MONDAYS)
3. Watering lawns, flower beds, landscaping, ornamental plants and gardens between 10 a.m. and 6 p.m. from May 1 through September 30 each year. (WATERING BETWEEN THOSE HOURS IS NOT ALLOWED)
4. Washing down sidewalks, driveways, parking areas, tennis courts, patios, other paved areas or buildings.
5. Washing any motor vehicle, trailer, boat, moveable equipment except with a bucket. A hose shall be used for rinsing only and for not more than three (3) minutes.
6. Use of a hose without a positive shut off nozzle. (NO OPEN HOSES)
7. Allowing excess water to flow into a gutter or any drainage area for longer than three (3) minutes.
8. Overwatering lawns or landscapes from November 1 through February 28, or during and immediately after a rain.

### Water Wasting Rates and Enforcement - Education and cooperation is our first goal, but the following enforcement procedures and charges will be followed for water wasting.

- 1st Water Waste - City will leave an information sheet describing the waste so that it may be corrected.
- 2nd Water Waste\*- City will give written notice requiring corrective action. \* Within 12 months of a 1st Water Waste
- 3rd Water Waste\*- City will give written notice, and a \$35 charge will be added to the next utility bill. \* Within 12 months of a 2nd Water Waste
- 4th Water Waste\*- City will give written notice, and a \$75 charge will be added to the next utility bill. \* Within 12 months of a 3rd Water Waste
- 5th and Subsequent Water Wastes\*- City will give written notice, and a \$150 charge will be added to the next utility bill AND the City may require a water meter and/or flow restrictor to be installed at the waster's expense.  
\* Within 12 months of the previous Water Waste

### Water saving tips and other Water Conservation Program information:

1. Before washing down paved areas for public health or safety (see #4 above) or for any special circumstances call the Water Conservation Office at 333-6829 for prior approval.
2. For lawns with a run-off problem, apply water for a short period of time and then allow enough time for it to soak in before turning the water back on, for example: 5 minutes on, 20 minutes off, 5 minutes on. This will increase the amount of water being absorbed and decrease the amount of water running off into the gutter. Consult landscapers/gardeners/nurseries for improving your lawns water absorbing capacity and for other ideas.
3. During and following rain it is not necessary to water lawns and landscaping, and normally from November 1 through February 28, one watering per week or less is more than enough.
4. If you need extra watering due to fertilizer application or for new turf/seeding, please first notify the Water Conservation Office at 333-6829.
5. Regularly replace your back-up batteries in your automatic sprinkler controls to prevent excess watering due to power failures or interruptions.

If you have any questions, need to discuss any violations, would like further information concerning water conservation, or to report water waste, please call the Water Conservation Office at 333-6829.

This is Not a Citation. However, if you have received any previous notice within the last 12 months, a written notice may follow.



**1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE**

**Exhibit N**





Notice of Violation of Lodi Municipal Code  
Section 13.08 Article III - Water Conservation

Issued to:

Copy to:

.....

.....

Location of Violation:

Lodi, California

First Water Waste - Informational Sheet left at location of violation.

\_\_\_\_\_ Second Water Waste\* - First mailed notice (warning) requiring corrective action.

\_\_\_\_\_ Third Water Waste\* - A \$35 charge will be added to next utility bill.

\_\_\_\_\_ Fourth Water Waste\* - A \$75 charge will be added to next utility bill.

\_\_\_\_\_ Fifth Water Waste\* - A \$150 charge will be added to next utility bill.\*\*

\*\* City may also require installation of a water meter and/or water restrictor at users expense.

\* Within 12 months of a previous waste of water

Nature of Violation(s):

\_\_\_\_\_ 1) Failure to control a controllable leak

(If you need help locating the leak, please call the Conservation Officer at 333-6829.)

\_\_\_\_\_ 2) Watering on an unassigned day

\_\_\_\_\_ 3) Watering between 10:00 am & 6:00 pm from May 1 thru September 30

\_\_\_\_\_ 4) Washing down sidewalks, paved areas, buildings, etc.

\_\_\_\_\_ 5) Use of a hose without a positive shut off nozzle

\_\_\_\_\_ 6) Flooding gutter or drainage area over three (3) minutes

\_\_\_\_\_ 7) Overwatering Nov. 1 thru Feb. 28 or during or after rain

\_\_\_\_\_ 8) Other \_\_\_\_\_

VIOLATIONS

Dates Times Type(s)

Current:

Jack L. Ronsko  
Public Works Director

Prior:

By: \_\_\_\_\_ Date: \_\_\_\_\_

Questions? Call the Conservation Officer at (209) 333-6829

See reverse for more information.

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit O**

# City of Lodi, Public Works Department

Date: September 13, 1993

## City of Lodi's Water Conservation Program Benefits

### Summary of a report to City Council dated August 12, 1993

#### History

The City of Lodi's Water Conservation Ordinance and Program have been in effect since 1977. This is one of the few conservation programs in the Valley that remained in effect after the 1976-77 drought through the start of the 1986-1992 drought.

#### School Education Program

The popular Water Science Educational Program was introduced to Lodi elementary schools in 1986.

This program supplements and advances Lodi's total effort to conserve water with science demonstrations/presentations taught in public and private elementary classrooms with the objective of teaching water awareness and water conservation techniques.

#### Effectiveness of Program

The citizens of Lodi, in cooperation with the conservation program, have significantly reduced their water usage. From 1970 through 1976 the average water use was 359 gallons per person per day (gpd). The average for 1991 and 1992 was about 230 gpd. (Calculated using total water production divided by population.)

#### Groundwater Levels

Lodi's water supply, as with many valley communities, is taken from their groundwater aquifers. Although this resource is renewable, valley-wide we are taking more water out than is being replaced.

How much has reduced water usage in Lodi slowed the depletion of Lodi's groundwater table? This is difficult to determine considering the many influences on the groundwater such as river flows, rain, other municipal pumping, and agricultural pumping, in addition to Lodi's 22 wells. The fact is that the groundwater table is dropping under Lodi. Lodi's groundwater table dropped over 10 feet from 1983 to 1992. Less water pumping due to Lodi's water conservation efforts have slowed this depletion.

#### Pumping Savings

Water saved through conservation also saves money. The most direct cost savings is in electrical costs to pump the groundwater. The 1992-93 electrical cost of pumping water in Lodi was approximately \$115 per million gallons. Currently when a residence uses more water, there is no additional income to the City since residences are not metered. (To retrofit residences with meters in Lodi would cost roughly \$15,000,000.) Other cost savings include decreased maintenance, repair, and replacement costs to wells, pumps, and motors.

To more accurately determine the reduced water usages, Lodi was compared to three area communities which had only voluntary or inconsistently enforced water conservation regulations, and also had reliable water use data going back to 1980.

The averages of these three communities were used to determine a "background level" of water use reductions due to drought publicity and minimal water conservation efforts. It should be kept in mind that Lodi probably started at a lower water use rate in 1980 than the other three communities due to Lodi's already existing water conservation efforts.

The reductions in water use for the three area communities were averaged then subtracted from Lodi's total water savings. This results in a net savings of 3.52 billion gallons since 1980 or 293 million gallons per year.

The electrical cost savings alone for the water saved above are calculated at \$404,856, using present costs. (These electrical savings are conservative considering the lower water usage in Lodi in 1980, due to the conservation program, were not calculated.) **The cost of the entire Water Conservation Program, adjusted to today's dollars from 1979-80 through 1991-92, totaled only \$210,342.**

#### Reduced Number of Wells Needed

The major cost savings however is in the number of wells that are needed to meet the City of Lodi's water demands. At today's rate each well costs the City of Lodi up to \$500,000 to explore, test, drill, develop, equip, and lay water mains to the distribution system (this does not include treatment costs).

The 1962 water master plan calculated the City needing 29 wells for today's population. The 1976 and 1990 water master plans had Lodi needing approximately 26 wells with a population of 54,000. Currently the City of Lodi is meeting the water demands in Lodi with a total of 22 wells (18 active and 4 standby).

Therefore, if the City required the 26 wells as projected in the 1976 and 1990 water master plans there would be four additional wells needed at this time. At today's cost that would be approximately \$2,000,000 (without any treatment). Communities which abandon water conservation efforts have only delayed these costly expenditures. Communities with ongoing programs may totally eliminate these costs if the reduced demands can be continued.

The City of Lodi had been ordered by the State to install treatment systems on City wells for dibromochloropropane (DBCP). (See the City of Lodi's Annual Water Quality Report for 1992 for more details). The City installed one treatment system at a cost of approximately \$500,000. Construction of further treatment systems on existing wells is being delayed and possibly avoided by Lodi's ability to keep current DBCP wells in a "standby" mode due to reduced water usage. So far in 1993, the City has been able to avoid using any DBCP well. (Note: some future wells may need treatment.)

#### Wastewater Treatment Savings

Another significant benefit of the citizens of Lodi's water conservation efforts has been the reduction of wastewater flows. These calculations show savings of nearly \$240,000 from 1987 through 1992. More significant is the effect on treatment plant capacity. Reduced wastewater flows may extend the life of the most recent \$10,000,000 expansion three to six years.

### SUMMARY

Lodi's ongoing water conservation program has been a benefit financially to the citizens of Lodi. After subtracting the cost of the program the net saving to water and wastewater operating budgets have been **over \$57,000 per year**. Additionally, reduced capital expenditures run in the millions of dollars. The program has also reduced the overdrafting of Lodi's groundwater.

While these efforts have kept your water rates among the lowest in the State, costs have risen every year and your rates will soon need to be raised. Water conservation efforts will help keep your rates among the lowest in the State.

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit G**



RESOLUTION NO. 95-28

A RESOLUTION OF THE LODI CITY COUNCIL  
ESTABLISHING A "LOCAL RULE" FOR  
WATER MEASUREMENT LAW  
(SENATE BILL 229)

---

WHEREAS, the City of Lodi has the responsibility to comply with Water Measurement Law, Senate Bill 229 (1992); and,

WHEREAS, Senate Bill 229 does not require water meters to be read or billings to be based on metered rate; and,

WHEREAS, if meters were installed at this time unnecessary wear would shorten the life of those meters; and,

WHEREAS, the City of Lodi does not have a residential meter users rate at this time; however, it is anticipated it is possible the City may establish a rate with the City's next water rate increase; and

WHEREAS, the City of Lodi has been collecting fees for meters since January, 1992, as required by Senate Bill 229. These funds are placed in a dedicated account specifically for purchase and installation of the required meters.

NOW, THEREFORE, BE IT RESOLVED, that the City of Lodi does hereby establish a "Local Rule", under which the City of Lodi will continue to collect fees on new water services for water meters and installations, but make the installations in the future at such time as metered billing is implemented.

Dated: March 1, 1995

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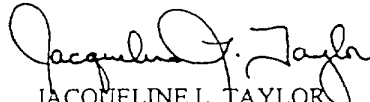
I hereby certify that Resolution No. 95-28 was passed and adopted by the Lodi City Council in a regular meeting held March 1, 1995 by the following vote:

AYES: COUNCIL MEMBERS Davenport, Pennino, Sieglock, Warner and Mann (Mayor)

NOES: COUNCIL MEMBERS - None

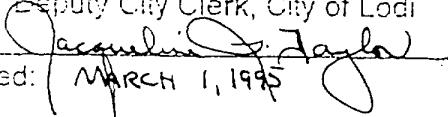
ABSENT: COUNCIL MEMBERS - None

The Foregoing Document Is Certified  
To Be A Correct Copy Of The Original  
On File In This Office.

  
JACQUELINE L. TAYLOR  
Acting City Clerk

Jacqueline L. Taylor  
Deputy City Clerk, City of Lodi

95-28

By   
Dated: MARCH 1, 1995

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit H**

## CITY OF LODI, WATER RATES

Effective June 1, 1995

### Residential Customers:

Type Water Customer	Monthly Flat Rate	
	New	Old
Residence-1 Br.	\$ 8.65	\$ 7.35
Residence-2 Br.	\$ 10.38	\$ 8.82
Residence-3 Br.	\$ 12.45	\$ 10.58
Residence-4 Br.	\$ 14.95	\$ 12.70
Residence-5 Br.	\$ 17.94	\$ 15.24
Residence-6 Br.	\$ 21.53	\$ 18.29
Apartment-1 Br.	\$ 7.42	\$ 6.30
Apartment-2 Br.	\$ 8.90	\$ 7.56
Apartment-3 Br.	\$ 10.68	\$ 9.07
Apartment-4 Br.	\$ 12.81	\$ 10.88
Apartment-5 Br.	\$ 15.37	\$ 13.06

### Commercial / Industrial Customers:

Service Size	Monthly Rate	
	New	Old
3/4 inch	\$ 12.45	\$ 10.58
1 inch	\$ 18.68	\$ 15.87
1.5 inch	\$ 24.91	\$ 21.16
2 inch	\$ 31.14	\$ 26.46
4 inch	\$ 56.05	\$ 47.62
6 inch	\$ 80.97	\$ 68.79
8 inch	\$ 105.88	\$ 89.96

### Metered Rate

#### Monthly Base Rate \*

Meter Size	New*	Old
3/4 inch	\$ 11.43	\$ 10.58
1 inch	\$ 17.14	\$ 15.87
1.5 inch	\$ 22.85	\$ 21.16
2 inch	\$ 28.58	\$ 26.46
4 inch	\$ 51.43	\$ 47.62
6 inch	\$ 74.29	\$ 68.79
8 inch	\$ 97.16	\$ 89.96

plus

Metered Water:	New	Old
per 100 Cu. Feet**	\$ 0.296	\$ 0.285
Appx. per 1000 gal	\$ 0.396	\$ 0.381

\* No longer includes any water allowance.

\*\* Approximately 748 gallons

**1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE**

**Exhibit I**

**City of Lodi, Public Works Department**  
**Water/Wastewater Division, Office of Water Conservation**  
**Historical Water Use**

Year	* Population	% Pop. Increase	Water use in Million Gal./Year**	% Water Use Increase	Total in MG Water Use Increase	Gallons per person per day	% Change
1970	28,614		3,735			358	
1971	29,307	2.42%	4,009	7.34%	274	375	4.80%
1972	29,990	2.33%	3,808	-5.01%	-201	348	-7.18%
1973	30,650	2.20%	3,977	4.44%	169	355	2.19%
1974	30,960	1.01%	3,911	-1.66%	-66	346	-2.64%
1975	31,350	1.26%	4,006	2.43%	95	350	1.15%
1976	32,150	2.55%	4,434	10.68%	428	378	7.93%
1977	32,250	0.31%	3,447	-22.26%	-987	293	-22.50%
1978	32,932	2.11%	3,740	8.50%	293	311	6.25%
1979	33,356	1.29%	4,024	7.59%	284	331	6.23%
1980	34,400	3.13%	4,012	-0.30%	-12	320	-3.32%
1981	35,450	3.05%	4,069	1.42%	57	314	-1.58%
1982	36,928	4.17%	3,767	-7.42%	-302	279	-11.13%
1983	38,318	3.76%	3,760	-0.19%	-7	269	-3.81%
1984	39,679	3.55%	4,561	21.30%	801	315	17.14%
1985	41,323	4.14%	4,827	5.83%	266	320	1.62%
1986	43,293	4.77%	4,914	1.80%	87	311	-2.83%
1987	45,795	5.78%	4,987	1.49%	73	298	-4.06%
1988	48,042	4.91%	5,005	0.36%	18	285	-4.33%
1989	49,221	2.45%	4,775	-4.60%	-230	266	-6.88%
1990	50,328	2.25%	5,014	5.01%	239	273	2.70%
1991	52,539	4.39%	4,338	-13.48%	-676	226	-17.12%
1992	53,186	1.23%	4,557	5.05%	219	235	3.77%
1993	53,293	0.20%	4,914	7.83%	357	253	7.62%
1994	53,903	1.14%	4,660	-5.17%	-254	237	-6.24%
1995	54,694	1.47%	4,689	0.62%	29	235	-0.83%

\* Population is from State Tax Roll figures from Com Dev Dept.

\*\* Water use is the total water production for system (all residential, industrial, commercial, landscape, etc.)

**City of Lodi, Public Works Department**  
**Water/Wastewater Division, Office of Water Conservation**  
**Water Conservation Season Water Use (April 1 thru October 31)**

Year	Population	Water use in Million Gal./Seas.*	% Water Use Increase	Gallons per person per day**	% Change	patrol miles	% Change
1990	50,328	3,774		291		21,490	
1991	52,539	3,220	-14.7%	238	-18.3%	31,371	46.0%
1992	53,186	3,467	7.7%	253	6.4%	19,521	-37.8%
1993	53,701	3,451	-0.5%	249	-1.4%	25,307	29.6%
1994	53,903	3,518	1.9%	253	1.6%	22,474	-11.2%
1995	54,964	3,511	-0.2%	248	-2.1%	25,276	12.5%

\* April 1 - October 31    \*\*subtracted 17% for industrial use from water production to calculate per capita use.

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit J**

## City of Lodi, Projected Water Use.

### 1.5% population growth and 235 gpcpd:

Year	Projected Population	1.5% Pop. Increase	Water use in Million Gal./Year**	% Water Use Increase	Total in MG Water Use Increase	Gallons per person per day	Water use Acre-Feet
1995*	54,694	1.5%	4,689	1.5%	29	235	14,391
1996	55,514	1.5%	4,765	1.6%	76	235	14,624
1997	56,347	1.5%	4,836	1.5%	71	235	14,844
1998	57,192	1.5%	4,909	1.5%	73	235	15,066
1999	58,050	1.5%	4,983	1.5%	74	235	15,292
2000	58,921	1.5%	5,057	1.5%	75	235	15,522
2001	59,805	1.5%	5,133	1.5%	76	235	15,754
2002	60,702	1.5%	5,210	1.5%	77	235	15,991
2003	61,612	1.5%	5,288	1.5%	78	235	16,231
2004	62,537	1.5%	5,368	1.5%	79	235	16,474
2005	63,475	1.5%	5,448	1.5%	81	235	16,721
2006	64,427	1.5%	5,530	1.5%	82	235	16,972
2007	65,393	1.5%	5,613	1.5%	83	235	17,227
2008	66,374	1.5%	5,697	1.5%	84	235	17,485
2009	67,370	1.5%	5,783	1.5%	85	235	17,747
2010	68,380	1.5%	5,869	1.5%	87	235	18,014
2011	69,406	1.5%	5,957	1.5%	88	235	18,284
2012	70,447	1.5%	6,047	1.5%	89	235	18,558
2013	71,504	1.5%	6,137	1.5%	91	235	18,836
2014	72,576	1.5%	6,229	1.5%	92	235	19,119
2015	73,665	1.5%	6,323	1.5%	93	235	19,406

### 2.5% population growth and 250 gpcpd:

Year	Projected Population	2.5% Pop. Increase	Water use in Million Gal./Year**	% Water Use Increase	Total in MG Water Use Increase	Gallons per person per day	Water use Acre-Feet
1995*	54,694	1.5%	4,689	1.5%	29	235	14,391
1996	56,061	2.5%	5,529	17.9%	840	270	16,968
1997	57,463	2.5%	5,667	2.5%	138	270	17,392
1998	58,899	2.5%	5,809	2.5%	142	270	17,827
1999	60,372	2.5%	5,954	2.5%	145	270	18,273
2000	61,881	2.5%	6,103	2.5%	149	270	18,729
2001	63,428	2.5%	6,255	2.5%	153	270	19,198
2002	65,014	2.5%	6,412	2.5%	156	270	19,678
2003	66,639	2.5%	6,572	2.5%	160	270	20,169
2004	68,305	2.5%	6,736	2.5%	164	270	20,674
2005	70,013	2.5%	6,905	2.5%	168	270	21,191
2006	71,763	2.5%	7,077	2.5%	173	270	21,720
2007	73,557	2.5%	7,254	2.5%	177	270	22,263
2008	75,396	2.5%	7,435	2.5%	181	270	22,820
2009	77,281	2.5%	7,621	2.5%	186	270	23,390
2010	79,213	2.5%	7,812	2.5%	191	270	23,975
2011	81,194	2.5%	8,007	2.5%	195	270	24,575
2012	83,223	2.5%	8,207	2.5%	200	270	25,189
2013	85,304	2.5%	8,412	2.5%	205	270	25,819
2014	87,437	2.5%	8,623	2.5%	210	270	26,464
2015	89,622	2.5%	8,838	2.5%	216	270	27,126

\*1995 actual population, growth, water usage.

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit K**



# City of Lodi, Public Works Department Water/Wastewater Division

Standing Water Level, SWL, (in feet from sounding tube). yearly averages:

Well No.	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977
1	58.2	60.6	60.0	60.0	59.3	58.8	56.5	53.5	49.0	47.5	48.2	44.8	45.8	52.3	54.8	52.8	54.2	53.3	53.8
1R	65.4	66.8	65.2	65.8	64.0	62.2	60.9	61.1											
2	51.8	53.2	54.0	55.0	52.7	48.7	51.4	47.3	43.4	41.3	43.8	41.1	41.8	44.8	46.1	45.2	44.8	45.5	46.0
3	55.9	56.5	57.4	57.4	55.8	55.7	53.8	51.1	46.2	45.4	47.2	43.1	46.7	49.6	51.4	50.7	50.2	50.6	50.4
3R	54.2	54.8	54.4																
4 in vault								43.0	40.8	38.7	40.2	38.0	38.1	43.4	45.1	43.9	44.9	44.2	45.0
4 ground	53.9	53.8	56.0	56.2	53.9	54.7	51.6												
4R	69.9	72.0																	
5	46.6	48.2	48.0	50.1	47.7	46.6	46.3	43.6	41.7	40.4	37.7	34.0	37.2	39.4	40.9	40.2	39.7	39.8	40.8
6A										aband.	46.7	45.5	47.7	54.7	55.8	55.7	55.9	56.1	58.0
6R	67.7	68.6	69.1	69.1	68.4	63.6	63.1	59.5	54.3	52.8	54.6								
7	36.1	37.6	36.6	38.7	37.6	37.2	34.6	34.7	33.3	30.7	29.6	27.4	24.9	30.6	33.2	33.0	32.1	33.3	41.0
8	69.7	70.4	70.5	71.2	68.8	67.0	64.8	62.5	58.2	56.9	53.8	51.3	54.1	61.5	62.0	60.4	59.6	59.4	61.6
9	50.8	51.4	52.8	54.0	51.1	52.2	48.1	47.2	42.5	41.8	42.1	37.7	39.3	44.1	46.8	45.0	43.0	44.1	43.5
10A														50.0	55.0	48.4	50.1	50.5	50.8
10R	52.7	55.6	56.3	56.2	57.3	58.6	55.9	49.7	47.1										
11A						aband.	60.7	61.7	57.8	54.5	55.7	51.9	51.3	57.8	63.6	60.3	61.5	61.0	63.3
11R	55.8	57.4	56.9	57.6	55.0														
12 Low															48.2	50.5	49.1	47.6	44.2
12 ground	64.9	65.5	66.9	66.2	62.9	63.2	60.4	59.0	58.4	53.9	51.5	48.7	52.7	57.9	60.5				
13	53.6	55.2	56.6	57.9	54.6	53.6	51.5	49.7	47.0	44.7	45.9	39.8	41.5	45.5	47.3	46.3	48.3	45.4	47.5
14	48.8	49.3	50.1	52.1	50.2	49.0	46.9	44.5	42.0	38.5	39.1	34.0	35.0	39.9	42.3	40.5	42.4	40.5	42.4
15	42.8	43.8	43.7	46.4	45.5	43.4	42.3	41.8	39.3	36.3	35.6	30.7	30.9	35.5	37.7	36.6	36.7	36.5	37.8
16	63.0	62.7	66.2	64.2	60.5	60.1	59.8	57.8	53.1	53.8	51.3	49.7	49.7	56.1	56.5	56.1	55.5	54.9	52.6
17	54.2	54.8	56.4	57.3	53.2	55.3	51.4	51.1	46.2	44.6	43.1	44.6	43.1	47.3	49.9	48.9	48.8	47.8	46.2
18	70.9	68.9	70.8	70.9	67.5	67.7	63.3	62.8	62.1	56.4	55.2	56.4	55.2	62.7	66.0	60.4	61.0	61.8	60.3
19	69.2	67.9	69.9	70.5	66.1	67.1	63.0	61.0	58.2	54.7	51.7	54.7	51.7	59.9	64.1				
20	59.1	59.8	59.1	60.6	56.6	57.1	56.6	56.2	52.5	50.1	48.7	50.1	48.7						
21	48.2	49.3	49.6	50.5	48.7	48.3	46.3	45.0	43.2	37.8									
22	78.7	77.1	78.6	77.9	76.3	73.2	71.8												
23	73.7	71.4	73.4	74.1	71.1	65.3	67.5												
24	58.3	60.5	58.7	60.7	new														
25	46.4	46.8																	
Yr Avg	0.66	0.62	0.71	-2.30	-0.92	-1.67	-1.75	-3.26	-2.32	-0.42	-2.29	0.63	5.35	2.42	-1.54	0.16	-0.31	0.72	-3.57
	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977

Page 1 of 2

Theoretical GW Level	45.8	46.5	47.1	47.8	45.5	44.6	42.9	41.2	37.9	35.6	35.2	32.9	33.5	38.9	41.3	39.8	39.9	39.6	40.3
Rain Season:	94-95	93-94	92-93	91-92	90-91	89-90	88-89	87-88	86-87	85-86	84-85	83-84	82-83	81-82	80-81	79-80	78-79	77-78	76-77
Rainfall Total::	23.86	11.73	23.97	16.77	11.81	14.43	10.57	12.79	13.63	25.89	16.48	17.55	36.09	27.47	13.66	20.06	16.92	25.32	8.17

# City of Lodi, Public Works Department Water/Wastewater Division

Standing Water Level, SWL, (in feet from sounding tube), yearly averages:

1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	Well No.	SndTube**	Elev.*
49.2	44.5	43.9	43.3	42.6	41.4	40.1	42.6	43.0	42.8	43.8	42.2	43.6	38.9	44.0	1	52.91	50.91
															1R	57.15	55.75
42.1	37.8	35.8	36.7	37.0	34.6	33.8	35.4	36.8	37.0	37.7	36.2	35.2	33.1	35.0	2	51.54	50.94
46.5	42.5	40.0	42.4	41.1	39.8	38.8	38.8	44.0	41.8	44.5	40.2	39.2	36.8	38.2	3	49.78	49.48
															3R	47.32	46.52
40.9	36.4	35.0	35.6	35.2	33.8	35.0	34.5	38.8	39.3	39.4	39.8	38.3	37.0	36.3	4 vault		
															4	51.75	51.15
															4R		
36.6	33.1	32.8	32.8	32.4	28.4	29.9	31.1	31.9	33.2	30.2	30.5	31.9	27.5	NR	5	47.05	46.25
53.6	46.1	43.6	43.9	47.0	43.1	40.4	43.8	42.9	44.0	44.4	43.0	44.4	44.5	43.0	6A		
															6R	49.56	47.96
38.6	33.2	33.0	33.2	33.8	32.0	31.5	32.4	33.9	34.5	33.7	30.4	30.2	28.6	31.0	7	43.58	43.58
57.8	51.0	45.6	41.5	44.2	44.8	43.5	45.8	46.2	45.5	48.7	54.8	52.5	42.3	45.3	8	48.26	47.26
39.8	34.2	32.1	33.2	33.4	29.8	28.6	32.5	32.4	31.3	31.8	37.1	27.0	27.8	NR	9	39.10	38.50
54.5	42.1	40.2	42.2	43.8	40.8	38.8	40.5	44.6	42.9	44.6	41.3	42.9	38.7	41.5	10	62.26	61.26
															10R	62.22	61.01
59.0	51.2	50.3	49.5	51.6	50.6	48.0	49.4	45.2	51.1	47.5	56.4	55.8	51.0	49.0	11A	63.24	62.24
															11R	59.18	58.98
39.7	37.6	38.4	35.4	35.7	40.6	38.9	42.1	43.3	41.8	43.7	46.7	40.0	41.0		12 Low		
															12 grnd	44.87	43.87
40.3	37.7	34.4	34.6	35.5	31.3	29.8	33.2	33.4	32.6	35.4	33.9	32.0			13	40.18	39.58
38.8	34.0	31.9	32.0	31.7	28.9	27.9	29.5								14	41.54	39.94
34.0	31.0	29.0	28.4	29.5	27.1	26.2									15	45.34	42.77
45.9	43.0	41.6													16	39.64	38.24
45.9															17	36.47	36.39
															18	44.54	43.84
															19	41.90	39.90
															20	38.67	36.07
															21	43.60	41.00
															22	51.37	50.17
															23	44.53	42.73
															24	53.61	52.51
															25	47.76	47.06
-4.70	-1.74	-0.09	0.65	-1.83	-1.05	1.90	1.10	0.11	0.58	-0.39	-0.55	-2.24	1.49			-17.8	
1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	Well No.		

Page 2 of 2

\* Mean Sea Level (MSL) to base of well.

\*\* To get the SWL relative to the MSL, subtract the SWL readings from this reference.

36.8	32.1	30.3	30.2	30.9	29.1	28.0	29.9	31.0	31.1	31.7	31.3	30.7	28.5	30		
75-76	74-75	73-74	72-73	71-72	70-71	69-70	68-69	67-68	66-67	65-66	64-65	63-64	62-63	61-62	Avg Rain	
7.99	17.23	20.58	22.52	9.22	16.45	16.83	22.96	11.31	23.86	12.70	18.27	12.19	19.03	12.60	17.18	

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit L**



# CITY OF LODI

## COUNCIL COMMUNICATION

AGENDA TITLE: Approve Principles of Negotiation for Conjunctive Use Project by Eastern San Joaquin Parties and the East Bay Municipal Utility District

MEETING DATE: December 20, 1995

PREPARED BY: Public Works Director

RECOMMENDED ACTION: That the City Council approve, by motion action, the principles of negotiation for the Conjunctive Use Project.

BACKGROUND INFORMATION: Each governing body of the East San Joaquin Parties (ESJP) is being asked to approve the principles of negotiation for the Conjunctive Use Project being undertaken jointly by ESJP and East Bay Municipal Utility District (EBMUD). Attached as Exhibit A is a letter, dated November 9, 1995, from Andy Christensen of Woodbridge Irrigation District (WID). Mr. Christensen is the Chair of the ESJP Technical Committee and is asking each agency of ESJP to review the prior request of Supervisor Barber and approve the principles of negotiation. Supervisor Barber's request and the principles are attached as Exhibit B. Supervisor Barber's request was sent to the City Council in October of this year but was not acted on at that time.

The Technical and Policy committees of ESJP have worked hard to develop these principles which will be used as a guideline in the negotiations with EBMUD. Rather than repeating everything, I have circled important areas in Supervisor Barber's letter which address some of the concerns Council may have.

John Pulver, the County's Water Resources Coordinator, and Andy Christensen, the Chair of the ESJP Technical Committee, will be in attendance at the Council Meeting in order to answer any questions on this item.

FUNDING: Not applicable.

  
Jack L. Ronsko  
Public Works Director

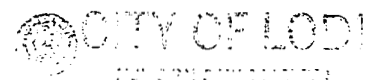
JLR/lm

Attachments

cc: John Pulver, San Joaquin County Water Resources Coordinator  
Andy Christensen, Chair, ESJP Technical Committee  
Water/Wastewater Superintendent

RECEIVED

DEC 13 1995

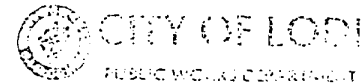


APPROVED: \_\_\_\_\_

H. Dixon Flynn -- City Manager

RECEIVED

NOV 14 1995



November 9, 1995

Jack Ronsko  
Lodi Public Works  
Call Box 3006  
Lodi, Ca. 95240

Dear Mr. Ronsko,

Re: Conjunctive Use Project

On May 2, 1995, the Board of Supervisors, but also with your support and ratification, signed an study agreement for an initial study effort with EBMUD of an regional conjunctive use ground water banking project that holds promise to be one of the most dynamic water projects proposed in recent years with the potential of (1) halting saline intrusion problems, (2) stopping the draft of ground water, (3) and meeting the present and future water needs of eastern San Joaquin County (4) while providing for the dry year water needs of EBMUD. Your support of each step in this process is vital if the effort is to continue. Initial study efforts have shown a range of project alternatives that conceptually meet project goals. Study efforts can not proceed further until an agreement is negotiated with East Bay Municipal Utilities District that defines mutually acceptable project goals and satisfactorily protects ESJP ground water, ground water basin, and surface water interests.

On October 17, 1995, Supervisor Barber sent a letter to all agencies that make up the Eastern San Joaquin Parties entity asking that agencies support continued negotiations with East Bay Municipal Utilities District for a joint project. Your help is needed once again and we ask that your entity take action to review, consider, and support the request made in Supervisor Barber's letter. A copy of your indication (resolutions or document) of support should be sent to Supervisor Barber's office. I have included a copy of the October 17, 1995 Supervisor Barber letter and "Principles". Thank you for your continued support!

Sincerely,

A handwritten signature in cursive script that reads "Anders Christensen".

Anders Christensen, Chair  
Eastern San Joaquin Parties Technical Committee

AC/jg  
enclosure:

---

ESJP Technical Committee



GEORGE L. BARBER

MEMBER

BOARD OF SUPERVISORS

FOURTH DISTRICT

222 EAST WEBER AVENUE  
ROOM 701  
STOCKTON, CALIFORNIA 95202

TELEPHONE: 468-3113  
THORNTON 794-2784  
STOCKTON: 943-6363

BILL BISHOFBERGER  
Legislative Assistant

October 17, 1995

RECEIVED OCT 18 1995

The Honorable Board of Directors of the  
Woodbridge Irrigation District  
18777 North Lower Sacramento Road  
Woodbridge, California 95258

Dear Members of the Board:

RE: CONJUNCTIVE USE PROJECT

As you know, we have been working for some time on a possible joint conjunctive use project with the East Bay Municipal Utility District (EBMUD). A study has been undertaken jointly with EBMUD at a cost of over \$600,000 with over \$300,000 provided through the Board of Supervisors by way of a San Joaquin County Flood Control and Water Conservation District assessment and the other half provided by EBMUD. That study has been completed. Our work has been done in connection with a Technical Committee and a Policy Committee to which you have appointed representatives.

Since the study is now complete, it is time to move forward with substantive negotiations with EBMUD and perhaps other interested parties. The Policy Committee has asked that I write to you and ask that you endorse continued negotiations under the proposed Principles. The enclosed Principles are intended as guidelines under which the East San Joaquin Parties ("ESJP") will undertake negotiations.

We believe the project contemplated by the Principles would assist in meeting the water needs of the ESJP and EBMUD, and would particularly address the needs of our critically overdrafted groundwater basin.

The conjunctive use Policy Committee has worked very hard to assemble a set of Principles acceptable to all of the ESJP representatives. These Principles are by no means the final word on how a future project would look. Rather, they are a set of guidelines to steer the ESJP during the negotiation process with EBMUD. Any final agreement will be subject to approval by the

RE: Conjunctive Use Project  
October 17, 1995

# City of Lodi, Public Works Department

## Water Use Distribution Estimates

1995 Calendar Year

Customer Type	Connections		% resid.	adjusted for use	Adj. MG of 3,049.8
	Metered	Unmetered			
Single Family	0	14,035	70%	80%	2439.8
Multi Family	0	6,015	30%	20%	610.0
Commercial	802	307	non-res unmetered		
Industrial	43	0	347	(28%)	
Governmental	38	40	non-res metered		
Agricultural	2	0	885	(72%)	
	885	20,397			

% Com/Inst unmetered	adjusted for use
-------------------------	---------------------

28%

20%

-0.17753

123.5 MG

Customer Type	Total Metered MG	Estimated Unmetered MG	Total MG	% of 4,220.1	
Single Family Residential	N/A	2,439.8	2,439.8	57.8%	all resident.
Multi Family Residential	N/A	610.0	610.0	14.5%	72%
Commercial/Institutional	617.5	123.5	741.0	17.6%	all non-resid.
Industrial	412.4	N/A	412.4	9.8%	28%
Landscape Irrigation	16.9	N/A	16.9	0.40%	
Other (Construction)	0.02	N/A	0.0	0.0%	
Totals	1,046.8	3,173.3	4,220.1	100.0%	

Est. Residential Total (3,049.8)

Total Well Production 4,689.0

Total Production - 10% \* 4,220.1

\* Estimated 10% losses based system leakages, hydrant flushing, wells flushing, etc.

MG = million gallons

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit E**



# WATER CONSERVATION ORDINANCE

## Lodi Municipal Code, Chapter 13.08, Article III.

### Waste. (Section 13.08.220)

The waste of water is prohibited and any waste shall make the person subject to the provisions of this article.

### Defined. (Section 13.08.230)

"Waste of water" includes but is not limited to the following:

- A. Failure to repair a controllable leak of water;
- B. The watering of lawns, flowerbeds, landscaping, ornamental plants or gardens on days or at times other than those allowed in Section 13.08.240 of this article;
- C. Washing of sidewalks, driveways, parking areas, tennis courts, patios, streets or other exterior paved areas or buildings except when required to remove any spillage of substances that may be a danger to public health or safety;
- D. Washing with water any motor vehicles, trailers or movable equipment other than with a bucket and rinsing the vehicle or equipment by use of a hose for not more than three minutes;
- E. Use of a hose without a positive shut off nozzle;
- F. The excess watering of any area so that water flows into a gutter or any drainage area for a period exceeding three minutes;
- G. The unnecessary running of water in any residential, commercial or industrial establishment onto the floor, pavement, ground or into any drain or drainage area, with any equipment or in any way for more than three minutes;
- H. Overwatering of lawns or landscapes from November 1 through February 28, or during or immediately following a rain.

### Watering days/hours. (Section 13.08.240)

- A. Days. The watering of lawns, flowerbeds, landscaping, ornamental plants or gardens throughout the year shall be allowed as follows:
  - 1. Premises having odd numbered street addresses on Wednesday, Friday and Sunday;
  - 2. Premises having even numbered street addresses on Tuesday, Thursday, and Saturday.
- B. Hours. Watering of lawns, flowerbeds, landscaping, ornamental plants or gardens shall be allowed at any hour except that between May 1 and September 30 (inclusive) of each year watering between the hours of 10 a.m. and 6 p.m. is prohibited

### Enforcement procedures. (Section 13.08.250)

- A. Whenever the City becomes aware of a waste of water the City shall notify the person at the premises where the waste of water occurred by delivering an Information Sheet. The Information Sheet shall describe the waste of water in order that it be corrected, cured or abated immediately or within such specified time as the City believes is reasonable under the circumstances. In addition, the Information Sheet may be given to any other person known to the City who is responsible for that waste of water or the correction thereof and may be delivered to the premises every time a waste of water occurs.

B. In the event of a second waste of water within a 12 month period, the City will send a written notice stating the date(s), time(s) and type(s) of water waste to the person who regularly receives the utility bill for the premises where the wasting occurred.

C. In the event of a third waste of water within 12 months of any previous waste of water, a written notice will be mailed assessing a thirty-five dollar charge to be added to the next monthly utility bill.

D. In the event of a fourth waste of water within 12 months of any previous waste of water, a written notice will be mailed assessing a seventy-five dollar charge to be added to the next monthly utility bill.

E. In the event of a fifth or any subsequent waste of water within 12 months of any previous waste of water, a written notice will be mailed assessing a one hundred and fifty dollar charge to be added to the next monthly utility bill. The City may also require the owner or user to pay for the cost of installation of a water meter service as a prerequisite to continuing service. The City may also install a flow restriction device on the water service and require the owner or user to pay for the costs of installation and/or removal.

### Strict application (Section 13.08.260)

If the Public Works Director or a designated representative determines the strict application of any of the provisions of this article may cause undue hardship or public health or safety to suffer, or if other special circumstances exist, the strict application may be waived. Special circumstances would include, but not be limited to: newly planted areas, newly seeded areas, washing down after cement work and pressure washing a building before painting. The decision of the public works director may be appealed to the City Council as described in 13.08.265 of this article.

### Appeals. (Section 13.08.270)

If the ruling made by the Public Works Director is unsatisfactory to the person requesting reconsideration, the person may, within twenty days after notification of the City's action, file a written appeal to the City Council. The written appeal shall be heard by the City Council within twenty days from the date of filing. The City Council shall make a final ruling on the appeal within twenty days of the hearing. The Public Works Director's decision, action or determination shall remain in effect during such period of reconsideration except that any charges assessed under this article will be stayed until the City Council has made it's decision.

### Violation-Infraction. (Section 13.08.280)

In addition to the enforcement procedures and surcharges set forth in this article, any person who wastes water, as defined in this article, may also be charged with an infraction.

### Emergency water conservation-Purpose (Section 13.08.290)

The purpose of emergency water conservation is to assist meeting water pressure and/or supply demands when the water system cannot or may not be adequate and the failure to meet such demands may result in harm to the water system and/or jeopardize the health and safety of the public. The Public Works Director or a designated representative shall determine the degree of emergency and determine what additional restrictions of water use or other appropriate actions must be taken to protect the water system and the citizens of Lodi.

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit F**



PUBLIC WORKS DEPARTMENT  
WATER/WASTEWATER DIVISION

## Annual Water Quality Report for 1994

To keep our water customers informed about the drinking water in Lodi, the City of Lodi distributes this annual report. The Water Quality Report on Page 4 summarizes testing performed on Lodi's water supply by State certified laboratories. To better understand the report please note the description of terms and abbreviations at the top of Page 4.

The City of Lodi supplies high-quality groundwater through approximately 24 City wells. These wells operate automatically on water pressure demand so that when water use increases, more wells come on line.

All 24 City wells are interconnected through approximately 198 miles of water mains. In 1994 4.660 billion gallons of water were pumped to satisfy Lodi's water demands. This represents 5.2% less than 1986 in spite of a population growth of 25% since 1986.

Your continuing water conservation practices have really paid off! A 1993 report calculated savings to be far above the cost of the Water Conservation Program. Maintaining your water conservation efforts results in annual cost savings in operation and maintenance and averts millions of dollars in capital expenditures, helping water rate increases stay low as possible and conserving a valuable natural resource. Please read the water conservation message on Page 3.

Drinking water provided in Lodi is of high quality and not only

meets but is better than all State and Federal drinking water standards (listed on Page 4). Certain wells would individually exceed the Dibromochloropropane (DBCP) standard if used. Please see the "DBCP Update" below for more information. Also, one well is slightly above the State limit for Trichloroethylene (TCE). This well is not being used.

Lodi takes 18 samples weekly from throughout Lodi's water distribution system for bacterial water quality. Regulations allow for 5% of all total coliform samples in a month to be positive. In November 1995 Lodi had 6% positive and exceeded the standard for "total coliforms". While State health officials agreed there was no health threat from this bacteria, Lodi officials decided to chlorinate Lodi's drinking water system for five days in December 1994 to cut down on these harmless bacteria that show up in the testing procedure. Occasionally the City may have to chlorinate your water, but we will make every effort to inform you in local papers before the drinking water is to be chlorinated.

While your water rates have been kept as low as possible, water rates have recently been raised to help meet funding needs. Please read the important message on your water rates on Page 2 of this report.

If you have any questions about this report or the quality of Lodi's water, please call the City's Water/Wastewater Office at 333-6740.

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### DBCP UPDATE

\*\*\*\*\*

The California Department of Health Services (DHS) sets drinking water standards, and has set a limit for Dibromochloropropane (DBCP). This organic chemical was once a popular pesticide used in and around Lodi by area farmers until banned by the government in 1977. DBCP has been shown to increase cancer nodules in rats and mice when exposed to very high levels over their lifetimes. It is a theory that these chemicals may also increase the risk of cancer in humans who are exposed over long periods to very minute amounts.

Although even the possibility of this theory being correct is debated by leading scientists, the United States Environmental Protection Agency (EPA) and DHS have set the drinking water standard for DBCP at 0.0002 parts per million (ppm) or 0.2 parts per billion (ppb) to reduce the theoretical risk of cancer. The theoretical risk of cancer is based on lifetime (70 years) exposure and drinking about two quarts of water every day.

Water which meets this standard is considered safe with respect to drinking water with this level of DBCP. The limit of 0.0002 ppm equals one drop in 66,000 gallons of water (it would take over 350 years to drink 66,000 gallons of water at 2 quarts/day). Theoretical risks associated with DBCP are based on 70 years exposure, so even EPA states that these levels in Lodi's water would not be significant when exposed for a relatively short time.

14 City wells at some point exceeded the new limit for DBCP. Of these 14 wells, the City has abandoned 4 wells, levels in 5 wells came back into compliance, 1 well has a treatment system, and 4 wells remain out of compliance (standby). The one Granular

Activated Carbon (GAC) treatment system in use has cost the City approximately \$600,000.

The 4 wells over the DBCP limit could be used for relatively short periods of time only during peak water demand hours in the hottest parts of the year, yet they are regulated as if they were on 24 hours a day, 365 days per year. With that in mind, the City proposed an alternative treatment/operation system that would save our citizens millions of dollars, yet meet Federal regulations. However, it is apparent that at this time DHS and EPA officials are not going to allow Lodi's proposal.

Capacity of the City's water system has not kept pace with peak water demands while the City has been trying to resolve the DBCP issue. Therefore, to help meet the peak water demands expected this summer, the City Council has approved the installation of three more GAC treatment systems at a cost of approximately one million dollars. Two systems are scheduled for completion this summer and the third site, scheduled for completion before the 1996 peak water season, will also have a 1 million gallon storage tank located east of Highway 99.

The City has also brought a lawsuit against the manufacturers of DBCP. This lawsuit will attempt to recover some of Lodi's costs including replacing and treating DBCP contaminated wells.

In the meantime you may consider your water safe to drink. The City will keep you regularly informed of progress made to resolve this issue. If you have any questions regarding this update, please call the City of Lodi's Water/Wastewater Office at (209) 333-6740.



## About the Recent Water Rate Increase



After a Public Hearing on April 19, 1995 the City Council raised water rates to help meet increasing financial needs of the City's Drinking Water System. The new water rates were approved after much debate and several meetings at which the Public Works Department detailed funding deficiencies for the water system. This is the first of a series of needed water rate increases.

The City operates and maintains your water system which includes: 24 wells, 198 miles of distribution mains, an elevated water tank, chlorination systems, emergency generators, equipment for installing and repairing water lines, a laboratory for water quality analyses, and a granular activated carbon treatment system on one well. There are also ever mounting costs to meet State and Federal regulations include increased costs for engineering, monitoring, administration, treatment, regulatory fees, etc. City policy also directed that 20% of the Water Utility revenue go to the City's General Fund to help pay for items such as Police and Fire Services, Parks and Recreation, Hutchins Street Square, etc.

There are MAJOR deficiencies in our water system we must face. For example, many distribution mains are 70+ years old. These undersized and failing water mains, located chiefly in the eastside and downtown areas, should be systematically replaced. If water main life spans were considered to be 70 years, we should be spending about \$836,000 annually to keep up. The sad fact is, however, over the past few years we have spend less than \$150,000 per year in water main replacements.

Costs associated with the DBCP regulations are also a major impact. The City has worked hard to keep these costs at a minimum while at the same time deliver water which meets strict State and Federal standards. Also, the City has financed the installation of DBCP treatment equipment with a low interest (3.41%) State loan. For more information please read the "DBCP Update" found on Page 1 of this report.

Public Works reports to the City Council have focused on water system deficiencies requiring the most attention. Funding needs discussed at the April 19, 1995 Public Hearing included:

Project or Program	Cost/year	Rate increase*
DBCP Loan payment	\$ 271,000	10%
Operation & Maint. of DBCP Filters	\$ 190,000	7%
System Replacement, O&M Needs	\$ 860,000	31%
Meter Retrofit Program	\$ 660,000	24%
<b>TOTALS:</b>	<b>\$ 1,216,000</b>	<b>72%</b>

\*The percent increase was above the rates at that time.

After the April 19, 1995 Public Hearing, City Council raised the water rates as listed below effective June 1, 1995. This raise starts funding a water main replacement program and repays loans used for DBCP cleanup efforts. The old water rate structure was also modified to adjust discrepancies between flat rate and metered customers. Rates for flat rate customers were raised 17.7%. Metered customer's base rates were raised only 8%, however the amount of water formerly included in the base rate was deleted. Charges for the metered water was therefore raised only 4%. If your water meter is larger than needed for your peak water uses, the City may be able to install a smaller meter to reduce your monthly base rate. City Council actions also lowered the water utilities contribution to the General Fund to 17.7% (from 20%).

This is only the third water rate increase since 1976, but more increases will be needed to keep pace with the ever mounting costs due to regulations, inflation and other water system needs. Lodi's water rate structure will again be reviewed for possible changes in the relationship between flat rate and metered customer charges, and for possible changes to encourage water conservation.

If you have any questions concerning these water rates or your meter size please call the City of Lodi Water/Wastewater Office at 333-6740.

### City of Lodi Water Rates Effective June 1, 1995

#### Residential Customers:

Type Customer	Monthly Flat Rate	
	Old	New
Residence-1 Br.	\$ 7.35	\$ 8.65
Residence-2 Br.	\$ 8.82	\$ 10.38
Residence-3 Br.	\$ 10.58	\$ 12.45
Residence-4 Br.	\$ 12.70	\$ 14.95
Residence-5 Br.	\$ 15.24	\$ 17.94
Residence-6 Br.	\$ 18.29	\$ 21.53
Apartment-1 Br.	\$ 6.30	\$ 7.42
Apartment-2 Br.	\$ 7.56	\$ 8.90
Apartment-3 Br.	\$ 9.07	\$ 10.68
Apartment-4 Br.	\$ 10.88	\$ 12.81
Apartment-5 Br.	\$ 13.06	\$ 15.37

#### Commercial/Industrial:

Flat Rate: Service Size	Monthly Rate	
	Old	New
3/4 inch	\$ 10.58	\$ 12.45
1 inch	\$ 15.87	\$ 18.68
1.5 inch	\$ 21.16	\$ 24.91
2 inch	\$ 26.46	\$ 31.14
3 inch	\$ 37.04	\$ 43.60
4 inch	\$ 47.62	\$ 56.05
6 inch	\$ 68.79	\$ 80.97

Metered: Service Size	Monthly Base Rate *	
	Old	New
3/4 inch	\$ 10.58	\$ 11.43
1 inch	\$ 15.87	\$ 17.14
1.5 inch	\$ 21.16	\$ 22.85
2 inch	\$ 26.46	\$ 28.58
3 inch	\$ 37.04	\$ 40.00
4 inch	\$ 47.62	\$ 51.43
6 inch	\$ 68.79	\$ 74.29
8 inch	\$ 89.96	\$ 97.16

\* No longer includes any water allowance.

Metered Water:		Old	New
per 100 Cu. Feet**		\$ 0.285	\$ 0.296
Appx. per 1000 gal		\$ 0.381	\$ 0.396

\*\* Approximately 748 gallons

## Why Lodi's Water Conservation Ordinance Remains in Effect in 1995

The drinking water supply for the City of Lodi is 100% groundwater. Water tables under Lodi have declined noticeably in our recent past. Since 1962 Lodi has lost a total of 16 feet of groundwater table based on City well readings. The six-year drought period, 1987 through 1992, accounted for 12 feet of this decline!

Since 1992 we have had two very wet winters and one below normal. We have seen our groundwater regain approximately one foot. It is nearly impossible to determine how much water conservation efforts have helped, but the more we conserve, the longer we can rely on this quality drinking water source and avoid expensive surface water treatment.

### Peak Water Demand Crisis in Lodi

The City is facing a possible shortage of well capacity this coming summer. Due to delays caused by the City's ongoing dilemma with DBCP contaminated wells, well construction and treatment have not kept pace with increasing population. *Thus, the need for water conservation during peak-water-use hours will be most critical this year.*

The peak water demands for the City of Lodi's water system occur twice daily, **between 6 & 9 a.m. and again between 7 & 10 p.m.** The highest peak water demands occur during the months of June, July, August, and September (with July and August typically the most crucial).

These peak water demands determine the total number of wells the City of Lodi's water system must have. (The City's water tower is used mainly for regulating water pressure. During peak

demands of 27,000+ gallons per minute, a full water tower would be drained in less than five minutes.)

### How Can You Help?

Some water uses during peak hours can be shifted to non-peak hours, such as:

- Automatic timers for lawn/landscaping watering could be set to operate ending before 6 a.m., or starting after 10 p.m.
- Perhaps the laundry could be put off until after 9 a.m. or done before 7 p.m.
- Could water uses such as the daily shower, car washing, dishwashing, etc., be changed to non-peak hours?
- Some commercial/industrial water uses could be changed to non-peak hours.

There are probably other good ideas you can come up with. As a bonus, making simple changes in water use patterns can save you \$\$\$.

It costs up to one-half million dollars (\$500,000) to site, drill, develop, equip, and connect a new well to the drinking water system. If we can keep down our peak water demands in Lodi, costs of some future wells can be avoided.

Please see the summary of regulations below and if you have any questions on water conservation or for further information on reducing peak demands, please call the Water Conservation Office at 333-6829.

Thank you for past and continued cooperation.

## City of Lodi - Water Conservation Ordinance Summary

**Ordinance Requirements - Water waste includes but is not limited to the following:**

1. Allowing a controllable leak of water to go unrepaired.
2. Watering lawns, flower beds, landscaping, ornamental plants or gardens except on watering days as follows:  
Odd-numbered addresses on **Wednesday, Friday and Sunday**;  
Even-numbered addresses on **Tuesday, Thursday, and Saturday**.  
(**WATERING IS NOT ALLOWED ON MONDAYS**)
3. Watering lawns, flowers, landscaping, ornamental plants and gardens **between 10 a.m. and 6 p.m. from May 1 through September 30 each year.** (You may NOT water during these high evaporation times.)
4. Washing down sidewalks, driveways, parking areas, tennis courts, patios, other paved areas or buildings.
5. Washing any motor vehicle, trailer, boat, moveable equipment except with a bucket. A hose (see # 6 below) shall be used for rinsing only and for not more than three (3) minutes.
6. Use of a hose without a positive shut off nozzle. (**NO OPEN HOSES**)
7. Allowing excess water to flow into a gutter or any drainage area for longer than three (3) minutes.
8. Overwatering lawns or landscapes from November 1 through February 28, or during and immediately after a rain.

**Water Wasting Rates and Enforcement** - Education and cooperation is our first goal, but the following enforcement procedures and charges will be followed for water waste.

-1st Water Waste - City will leave an information sheet describing the waste so that it may be corrected.

-2nd Water Waste\*- City will give written notice requiring corrective action.  
\* Within 12 months of a 1st Water Waste

-3rd Water Waste\*- City will give written notice, and a \$35 charge will be added to the next utility bill. \* Within 12 months of a 2nd Water Waste

-4th Water Waste\*- City will give written notice, and a \$75 charge will be added to the next utility bill. \* Within 12 months of a 3rd Water Waste

-5th and Subsequent Water Wastes\*- City will give written notice, and a \$150 charge will be added to the next utility bill AND the City may require a water meter and/or flow restrictor to be installed at the waster's expense.  
\* Within 12 months of the previous Water Waste.

If you have any questions, would like further information concerning water conservation, or to report water waste, please call the Water Conservation Office at 333-6829.



# CITY OF LODI

## Public Works Department

### Annual Water Quality Report for 1994

#### Definition of Terms and Abbreviations:

NA = Not Applicable

NS = No Standard (MCL) Set\*

ND = None Detected at Minimum Detection Level

MCL = Maximum Contamination Level (State Standard)

< Means "Less Than" The Amount Shown

"Minimum Detection Level" = Lowest amount a laboratory can accurately report  
Unless noted, results given as mg/L (milligrams per Liter, or parts per million).

\* In addition to regulated constituents, Lodi monitored wells for additional organic chemicals for which the California Department of Health Services has not yet set a standard (MCL) and results were below minimum detection levels.

Regulated and Unregulated Organic Chemicals, mg/L	Maximum Contaminant Level (MCL)	Minimum Detection Level - mg/L	Average All Wells mg/L	Range High - Low mg/L
1994 Data				
Bromodichloromethane	NS	0.0005	ND	NA
Bromoform	NS	0.0005	ND	NA
Chloroform	NS	0.0005	ND	NA
Dibromochloromethane	NS	0.0005	ND	NA
Total THM's	100	0.0005	ND	NA
Benzene	0.001	0.0005	ND	NA
Carbon tetrachloride	0.0005	0.0005	ND	NA
Ethylbenzene	0.0005	0.0005	ND	NA
1,4-Dichlorobenzene (p-DCB)	0.0005	0.0005	ND	NA
1,2-Dichloroethane (1,2-DCA)	0.0005	0.0005	ND	NA
1,1-Dichloroethylene (1,1-DCE)	0.006	0.0005	<0.0005	0.003-ND a)
Total 1,3-Dichloropropane	0.0005	0.0005	ND	NA
Monochlorobenzene	0.03	0.001	ND	NA
1,1,2,2-Tetrachloroethane	0.001	0.0005	ND	NA
Tetrachloroethylene (PCE)	0.005	0.0005	ND	NA
1,1,1-Trichloroethane (1,1,1-TCA)	0.2	0.001	ND	NA
1,1,2-Trichloroethane (1,1,2-TCA)	0.032	0.001	ND	NA
Trichloroethylene (TCE)	0.005	0.0005	<0.0005	0.009-ND b)
Vinyl Chloride (VC)	0.0005	0.0005	ND	NA
m, p-Xylene	NS	0.01	ND	NA
O-Xylene	NS	0.01	ND	NA
Total Xylenes (m, p & O)	1.75	0.01	ND	NA
Dibromochloropropane (DBCP)	0.0002	0.00001	0.00007	0.0013-ND c)
Ethylene Dibromide (EDB)	0.00002	0.00002	ND	NA
Atrazine (AATraz)	0.003	0.001	ND	NA
Molinate (Odrum)	0.02	0.002	ND	NA
Simazine (Princep)	0.01	0.001	ND	NA
Thiocarb (Bulero)	0.07	0.001	ND	NA
Endrin	0.0002	0.0001	ND	NA
Lindane (gamma-BHC)	0.004	0.0002	ND	NA
Methoxychlor	0.1	0.01	ND	NA
Toxaphene	0.005	0.001	ND	NA
Chlordane	0.0001	0.0001	ND	NA
2,4-D	0.1	0.01	ND	NA
Bentazon (Basegran)	0.018	0.002	ND	NA
2,4,5-TP (Silvex)	0.01	0.001	ND	NA
Bromobenzene	NS	0.0005	ND	NA
Bromochloromethane	NS	0.0005	ND	NA
Bromomethane (Methyl Bromide)	NS	0.0005	ND	NA
n-Butylbenzene	NS	0.0005	ND	NA
sec-Butylbenzene	NS	0.0005	ND	NA
tert-Butylbenzene	NS	0.0005	ND	NA
Chloroethane	NS	0.0005	ND	NA
2-Chloroethylvinyl ether	NS	0.001	ND	NA
Chloromethane (Methyl Chloride)	NS	0.0005	ND	NA
2-Chlorotoluene	NS	0.0005	ND	NA
4-Chlorotoluene	NS	0.0005	ND	NA
Dibromomethane	NS	0.0005	ND	NA
1,2-Dichlorobenzene (o-DCB)	NS	0.0005	ND	NA
1,3-Dichlorobenzene (m-DCB)	NS	0.0005	ND	NA
Dichlorodifluoromethane	NS	0.001	ND	NA
1,1-Dichloroethane (1,1-DCA)	0.005	0.0005	ND	NA
cis-1,2-Dichloroethylene	0.006	0.0005	ND	NA
trans-1,2-Dichloroethylene	0.01	0.0005	ND	NA
1,2-Dichloropropane	0.005	0.0005	ND	NA
1,3-Dichloropropane	NS	0.0005	ND	NA
2,2-Dichloropropane	NS	0.0005	ND	NA
1,1-Dichloropropane	NS	0.0005	ND	NA
Hexachlorobutadiene	NS	0.0005	ND	NA
Isopropylbenzene (Cumene)	NS	0.0005	ND	NA
p-Isopropyltoluene	NS	0.0005	ND	NA
Methylene chloride	NS	0.001	ND	NA
Naphthalene	NS	0.0005	ND	NA
n-Propylbenzene	NS	0.0005	ND	NA
Styrene	NS	0.0005	ND	NA
1,1,1,2-Tetrachloroethane	NS	0.0005	ND	NA
Toluene	NS	0.01	ND	NA
1,2,3-Trichlorobenzene	NS	0.0005	ND	NA
1,2,4-Trichlorobenzene	NS	0.0005	ND	NA
Trichlorofluoromethane (Freon 11)	0.15	0.001	ND	NA
1,2,3-Trichloropropane	NS	0.0005	ND	NA
Trichlorotrifluoroethane (Fr 113)	1.2	0.001	ND	NA
1,2,4-Trimethylbenzene	NS	0.0005	ND	NA
1,3,5-Trimethylbenzene	NS	0.0005	ND	NA
Bromacil (Hyvar)	NS	0.01	ND	NA
Diazinon	NS	0.00002	ND	NA
Prometryn (Caparol)	NS	0.002	ND	NA

(See top of next column for footnotes.)

- a) Found only in Well #2 at trace levels below the MCL.  
b) Found in Wells #12, 18, & 24 in trace levels, Well # 2 over MCL & off line.  
c) Wells officially over the MCL on standby and not used in 1994. See the DBCP Update - page 1.

Regulated Inorganic Chemicals, mg/L	Maximum Contaminant Level (MCL)	Minimum Detection Level - mg/L	Average All Wells mg/L	Range High - Low mg/L
1992-1994 Data				
Aluminum	1.0	0.1	<0.05	0.100-ND
Arsenic	0.050	0.01	0.0038	0.0067-ND
Barium	1.0	0.1	0.084	0.15-0.023
Cadmium	0.010	0.001	<0.0001	0.0001-ND
Chromium	0.05	0.01	<0.01	0.01-ND
Fluoride	1.4	0.1	0.1	0.2-ND
Lead	0.050	0.005	<0.001	0.0018-ND
Mercury	0.002	0.001	ND	NA
Nitrate as N	10	1	1.7	4.9-ND
Selenium	0.01	0.005	ND	NA
Silver	0.05	0.01	ND	NA

Secondary Standards for Aesthetic Purposes only	Secondary Drink. Water Standard	Minimum Detection Level	Average of All Wells	Range High - Low
1992-1994 Data				
Chloride, mg/L	500	1	12	46-2.3
Color-Units	15	0.3	<3	3-ND
Copper, mg/L	1.0	0.05	ND	NA
Iron, mg/L	0.3	0.1	<0.03	0.047-ND
Manganese, mg/L	0.05	0.005	<0.005	0.025-ND
Odor-Threshold Units	3	1	ND	NA
Specific Conductance umhos/cm	1600	1	309	545-115
Sulfate, mg/L	500	1	11	23-1.5
Surfactants (LAS, MBAS) mg/L	0.5	0.01	ND	NA
Total Dissolved Solids, mg/L	1000	1	240	350-100
Turbidity, NTU Units	5	0.1	<0.1	0.3-ND
Zinc, mg/L	5.0	0.05	<0.01	0.017-ND

Additional Constituents Measured.	Maximum Contaminant Level (MCL)	Minimum Detection Level	Average of All Wells	Range High - Low
1992-1994 Data				
pH, Units	NS	NA	7.3	7.7-6.7
Calcium, mg/L	NS	NA	23	43-6.6
Hardness as CaCO <sub>3</sub> , mg/L a)	NS	NA	115	260-34
Magnesium, mg/L	NS	NA	12	21-4.3
Nitrite as N, mg/L	NS	NA	ND	NA
Potassium, mg/L	NS	NA	5.0	7.6-2.0
Sodium, mg/L	NS	NA	19	39-6.4

a) To calculate grains per gallon, divide by 17.1

Bacterial Water Quality, Total Coliform Bacteria	Maximum Contaminant Level (MCL)	Minimum Detection Level	Total % Positive	Monthly High-Low %Positive
1994 Data				
Total Coliform, Positive %	5% /month	NA	1.4%	6.1%-0%
Fecal Coliform	<1 /month	NA	0.00%	ND

Lead & Copper Rule Customer Tap Monitoring	Maximum Contaminant Level (MCL)	Minimum Detection Level	Average 90th Percentiles	Range of Individual Results
1992 Data				
Lead, 90th percentile, mg/L	0.015	0.001	0.0015	0.006-ND
Copper, 90th percentile, mg/L	1.3	0.02	0.26	1.3-ND

Radioactivity, pico Curies per Liter	Maximum Contaminant Level (MCL)	Minimum Detection Level	Average of All Wells	Range High - Low
1992-1994 Data				
Gross Alpha	15	NA	0.62	3.70 - ND

Results are from wells which supplied drinking water in 1994.

For any questions concerning these analytical results, contact the Assistant Water/Wastewater Superintendent at (209) 333-6740.

## DRAFT WATER SHORTAGE CONTINGENCY RESOLUTION

In the event of a water shortage emergency, the following is a draft water shortage contingency resolution to be passed by the Lodi City Council. The draft below gives the City Council's support to the Public Works Director in taking emergency actions as currently authorized in Lodi Municipal Code, Chapter 13.08, Article III, Section 13.08.290, "Emergency Water Conservation".

### DRAFT

#### *City of Lodi*

*Resolution No. \_\_\_\_\_*

*WHEREAS, Lodi Municipal Code, Chapter 13.08, Article III, Section 13.08.290, Emergency Water Conservation allows the Public Works Director to determine the degree of emergency and determine what additional restrictions of water use or other appropriate actions must be taken to protect the water system and the citizens of Lodi; and*

*WHEREAS, the City of Lodi is experiencing water shortages due to drought conditions, therefore;*

*BE IT RESOLVED by the City Council of the City of Lodi that full support is given to the Public Works Director to make the appropriate recommendations which may include increased restrictions on watering days and hours, restrictions on washing vehicles, etc., restrictions on large water users, restrictions on flushing of water lines, restrictions on the filling of swimming pools, and increases in the current penalties for not complying with water conservation restrictions for the duration of the emergency, and urge full support and cooperation from the citizens of Lodi.*

*Affix Official Seal Here*

*Signature: \_\_\_\_\_*

*Name: \_\_\_\_\_*

*Title: \_\_\_\_\_*

*Clerk of City of Lodi*

## **SECTION VI**

### **RECYCLED WATER OPPORTUNITIES**

#### **WASTEWATER TREATMENT FACILITY**

The City-owned and operated wastewater treatment facility is located approximately six miles from the City of Lodi's water service area. The treatment facility is a conventional activated sludge process with anaerobic digestion and chlorination/dechlorination. Currently a daily average of 6.2 million gallons of domestic wastewater is treated at the treatment facility. Additionally the City operates a separate industrial system which utilizes a cost-effective ponding and direct irrigation process. The industrial system has a separate trunk line from the City to the treatment facility which is primarily used for cannery process water discharges of approximately 230 million gallons annually.

#### **RECLAMATION / RECYCLING**

Presently there are no plans to construct six miles of pipeline and pumping stations necessary to return reclaimed/recycled water to the water utility service area. Treated wastewater is either reclaimed/recycled (mainly for irrigation of City-owned farm lands leased out to local farmers) or is discharged to the San Joaquin Delta.

The City owns a total of 1,040 acres of land at the treatment facility. Currently 641 acres are irrigated with reclaimed/recycled water from the domestic treatment process and/or with process water from a cannery located within the City of Lodi. There are other ongoing and pending projects to further utilize reclaimed water in the area of the City wastewater treatment facility. Reclaimed/recycled water from the domestic treatment process effluent is used on-site at a 49 megawatt steam power generation facility and fish rearing ponds for the mosquito abatement district. A pending future project will utilize another 275 acres of land at the treatment facility for irrigation of a youth soccer complex. Exhibit Q is a recent study which shows current and pending water reclamation/recycling projects and usages.



## **SECTION VII**

### **OTHER REQUIREMENTS OF THE PLAN / MISCELLANEOUS**

#### **MECHANISM FOR DETERMINING ACTUAL REDUCTIONS**

Actual reductions can be determined by total water production records, peak water usage records, and individual commercial and industrial water meter usage records.

#### **SUPPLY DEFICIENCIES**

Historically, there have been no water supply deficiencies nor are there any expected in the immediate future. Drought conditions have a long-term impact on groundwater levels as discussed earlier, but have not shown any short-term or emergency supply problems. Exhibit K is a chart showing the historical standing groundwater levels as measured at Lodi City wells from 1962 through 1995 and the historical rainfall measurements. Again, this shows that drought conditions have not had a short-term effect on groundwater supply.

#### **MISCELLANEOUS**

- The City of Lodi offers free inspections of water user facilities and water use patterns. There have been no distribution system water audits nor any plans for one in the future.
- Without all users or areas metered, a distribution system water audit would not be feasible and therefore none are planned.
- City water department crews are trained in the use of equipment to detect water leaks when there is one suspected.
- All reports of water leaks are investigated and any applicable repairs made.
- Large landscape irrigation water customers were required to submit an "Irrigation Water Conservation Plan". These submitted plans resulted in discussions and implementations of water-saving irrigation measures.

-Once-through cooling systems are not allowed on new construction. Many of the former once-through cooling systems have been found and taken out of service. The abandonment of these systems has been encouraged by high water bills and charges for the wastewater discharges resulting from their operation.

### **ADDITIONAL ELEMENTS**

At this time there are no projections (20 years) to indicate that an additional water supply is needed. The previously described water conservation efforts and ongoing discussions and negotiations with eastern San Joaquin County water purveyors and EBMUD are dealing with the long term preservation of the local groundwater (Exhibit L). Although recycling of treated wastewater back into the City of Lodi water utility service area is not practical at this time, much of the treated wastewater is reclaimed/recycled near the wastewater treatment facility as discussed earlier (Exhibit Q).

### **FIVE YEAR BUDGET**

Attached (Exhibit R) is the 1995-96 budget for Lodi's Water Conservation Program. In the next five years, there are no major increases in expenditures anticipated other than normal inflationary increases expected in salaries, supplies, postage, and services.

### **CONTACT PEOPLE**

See Exhibit S.

### **WATER MANAGEMENT PROGRAMS TO IMPLEMENT IN THE NEXT FIVE YEARS**

The City of Lodi Water/Wastewater Division plans on continuing to fund the current comprehensive water conservation program. Water meters will continue to be installed on all new or upgraded commercial and industrial water customers. The State of California requirement for Ultra-Low-Flow toilets is being enforced. The City has adopted the States Water Efficient Landscape Ordinance relating

to requirements on landscape construction. The use of reclaimed/recycled water in the area of the City's wastewater treatment facility will be expanded as discussed earlier.

## **SUMMARY**

The City of Lodi has demonstrated major reductions in water-use patterns through the current Water Conservation Program. The additional State-mandated water efficient landscape, low flow toilet, and metering programs may also have marginal effects on water-use patterns in Lodi. The water supply outlook for the City of Lodi foresees no short-term water supply shortages. The City will continue the successful conservation program practices and continue to participate in conjunctive use negotiations for the long-term water supply improvement of the area.

**1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE**

**Exhibit A**



# CITY OF LODI

## COUNCIL COMMUNICATION

AGENDA TITLE: Set Public Hearing for April 17, 1996 to Consider Adoption of the Updated Urban Water Management Plan


MEETING DATE: March 20, 1996

PREPARED BY: Public Works Director

RECOMMENDED ACTION: That the City Council set a public hearing for April 17, 1996, to discuss the adoption of required updating of Lodi's Urban Water Management Plan.

BACKGROUND INFORMATION: During the 1983-1984 Regular Session, the California Legislature enacted Assembly Bill 797, and as amended subsequently, created Water Code Section 10610, et seq., known as the Urban Water Management Planning Act. This Act requires the City of Lodi to review and update the Urban Water Management Plan every five years. This will be the second update of Lodi's Urban Water Management Planning Act. The adoption process requires a public hearing and adoption by the City Council.

FUNDING: None required.

  
Jack L. Ronsko  
Public Works Director

Prepared by Frank Beeler, Assistant Water/Wastewater Superintendent

JLR/FB/dsg

cc: City Attorney  
Water/Wastewater Superintendent

RECEIVED

MAR 14 1996

APPROVED: \_\_\_\_\_

H. Dixon Flynn -- City Manager



CITY OF LODI

OFFICIAL RECORDS SECTION

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit B**

CITY OF LODI, PUBLIC WORKS DEPARTMENT  
Water/Wastewater Division  
WELL NUMBERS

City of Lodi, System Number: 3910004

CITY WELL NUMBER	DHS "PRIMARY STATION CODE"	ADDRESS	CAPACITY GALLONS PER MINUTE
1R	03N/06E-06N03 M	705 E. Lodi Avenue	1175
2	03N/06E-01L01 M	216 1/2 N. Church St.	1325
3R	3910004-031	144 S. Rose Street	825
4R	3910004-032	1215 Thurman Street	2400
5	03N/06E-03H02 M	401 N. Mills Avenue	1225
6R	03N/06E-12K06 M	224 Mission Street	1475
7	04N/06E-34R06 M	2101 W. Turner Rd.	1200
8	03N/06E-13B04 M	1408 S. Stockton St.	925
9	03N/06E-10A02 M	358 Shady Acres Dr.	1250
11R	3910004-029	824 E. Turner Rd.	1400
12	03N/06E-13D02 M	1412 S. Hutchins	700
13	03N/06E-10B02 M	520 S. Lower Sacramento Rd.	1225
14	03N/06E-03Q01 M	121 S. Allen Drive	1575
15	03N/06E-03B02 M	830 N. Lower Sacramento Rd.	1525
16	03N/06E-14L01 M	1490 W. Century Blvd	1500
17	03N/06E-10H02 M	2017 W. Vine St.	1725
18	03N/06E-13M02 M	200 W. Century Blvd	1800
19	03N/06E-14R05 M	601 Harney Lane	1025
20	03N/06E-15A02 M	2126 W. Kettleman Lane	1875
21	03N/06E-03G02 M	136 N. Lower Sacramento Rd.	2150
22	03N/07E-18M03 M	2040 S Cherokee Lane	1250
23	03N/06E-13P01 M	55 E. Harney Lane	1475
24	3910004-028	640 N. Stockton St.	1550
25	3910004-033	1014 Holly Drive	1650

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit C**

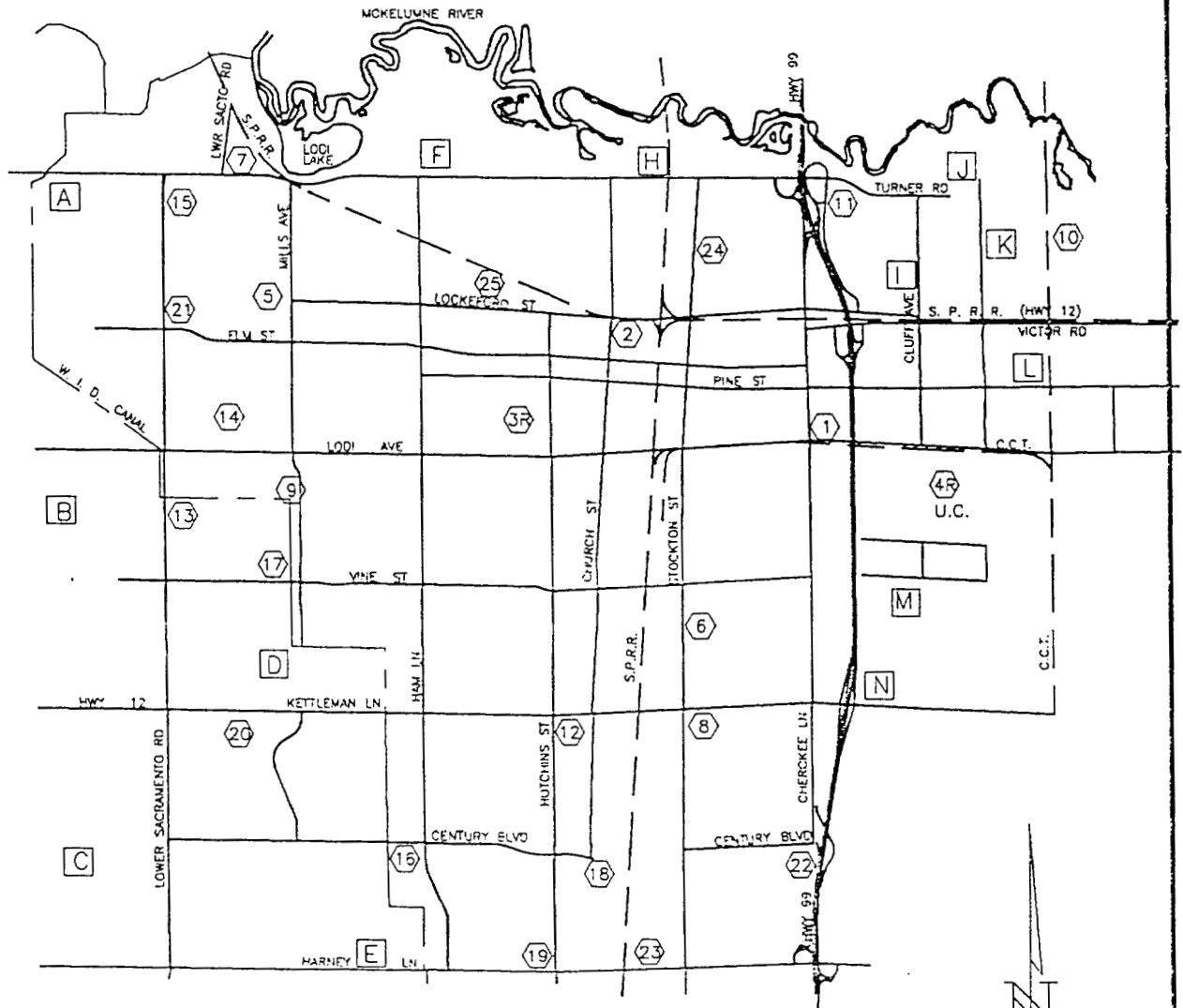




# CITY OF LODI

PUBLIC WORKS DEPARTMENT

## WATER UTILITY SERVICE AREA



WELL NO.

UC UNDER CONSTRUCTION

P PLANNED WELLS

1995 CITY OF LODI  
URBAN WATER MANAGEMENT  
PLAN UPDATE

**Exhibit D**